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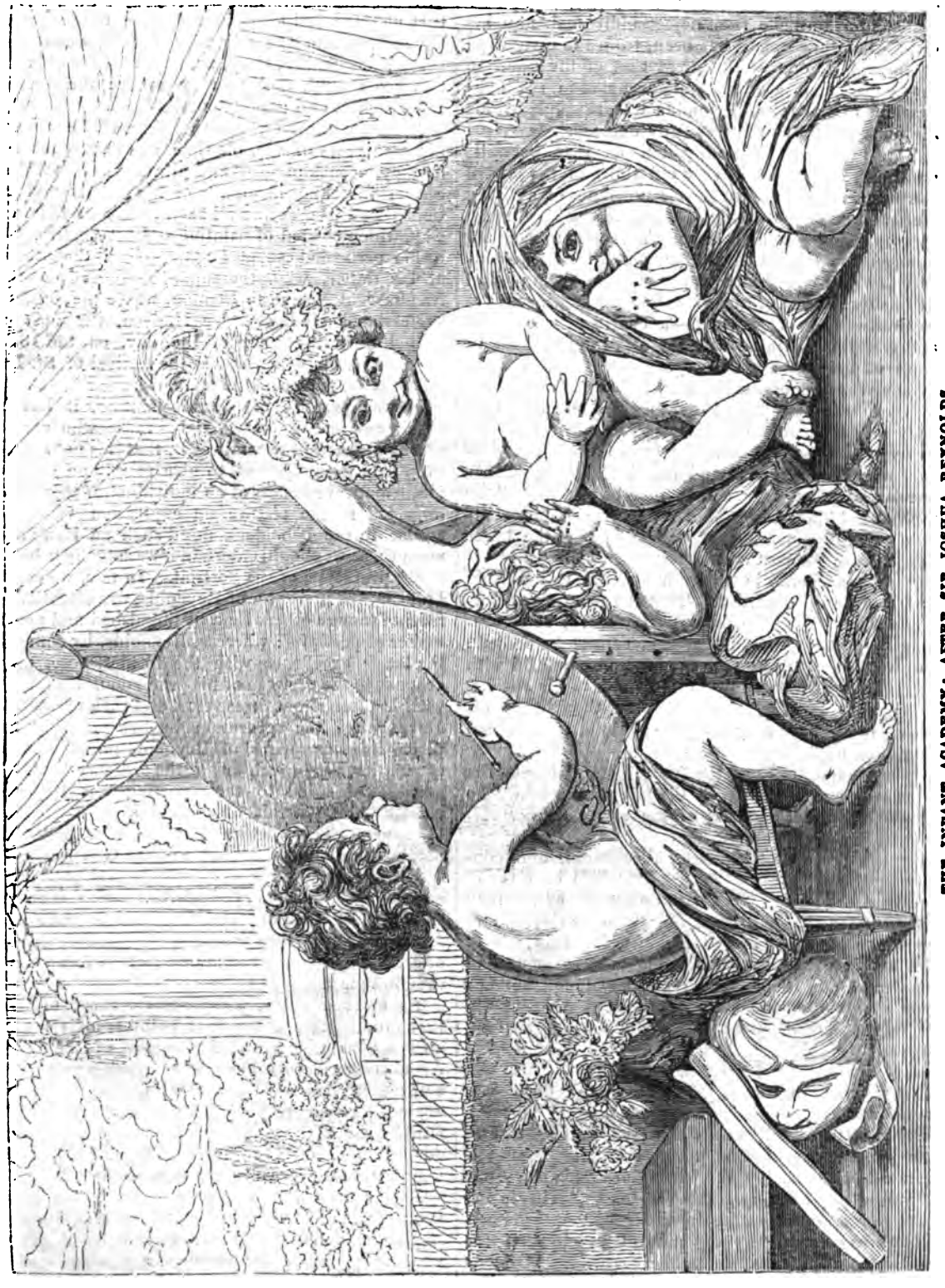

THE INFANT ACADEMY; AFTER SIR JOSHUA REYNOLDS.

SIR JOSHUA REYNOLDS
AND HIS WORKS.
I.

AMONG the distinguished characters of the last century, who exercised great influence upon the profession or vocation to which their abilities led them, we may class SIR JOSHUA REYNOLDS. It is sufficient for the term of a man's life and the natural powers of his mind, that, in whatever direction his capacity may develope itself, he should continue, in order to excel, to cultivate the object to which his capacity tends, so as to make such object individual, and his own. Painting is, and has been, from the early days of the world, one of the great arts of life; and to that department of it, which is occupied in the delineation of portraits, Reynolds was throughout his life most chiefly and successfully devoted.

The legends of antiquity tell us that portrait-painting took its rise in very old times in the city of Corinth, in Greece, from the circumstance of a young woman tracing the profile of her lover by his shadow cast upon the wall by a lamp. This was to serve as a memento during a separation, which the dread concerns of war were about to inflict upon them:—and in this dwells one of the great charms and incentives to this species of painting,—a charm which incites and enchains the mind with the desire to possess, in spite of time, of absence, space, and death, such a means of calling up the features, looks, and expression of those whom we have loved and lost on earth, that they may seem to be constantly with us in this world, as we trust they will be eternally in the next. Whatever may be the merits and excellencies of all other species of painting, whether they be of a mental or mechanical kind, they cannot in this one quality compete with the tracing of portraits; for the latter ministers to the best and holiest of human propensities, and excellence in this ministration is naturally and deservedly rewarded. That the painting of portraits is, and has been, liberally rewarded, as conducing to gratify pride and vanity, cannot be denied: but we do not refuse the good because sullied with evil; and we do not refuse due honour to Sir Joshua, though, as Northcote remarks, he thought it his duty "to discover only the perfections of those whom he represented."

The general tenor of the foregoing sentiments has been long ago confirmed by the pen of Johnson, who speaks of this department of the art as being "employed in diffusing friendship, in renewing tenderness, in quickening the affections of the absent, and continuing the presence of the dead." The exercise of of this art, he goes on to observe, every man desires "for the sake of those whom he loves, and by whom he hopes to be remembered. This use of the art is a natural and reasonable consequence of affection: and though, like all other human actions, it is often complicated with pride, yet even such pride is more laudable than that by which palaces are covered with pictures, that, however excellent, neither imply the owner's virtue, nor excite it."

The subject of this paper was born at Plympton, in Devonshire, in 1723, and was one of a large family. His father was a clergyman and master of the grammar school of the place. He has been accused of neglecting the education of his son; but if young Reynolds' attention was not driven to the acquirement of literature in the ordinary course, it was owing to his strong natural predilection for sketching, principally, the human features. His consequent neglect of the pursuits, which education imposes on the young, was a source of much rebuke from his sire:—poetry, painting, and the fine arts, generally having been found to bring their incipient professors into much trouble, for neglecting, in the judgment of their older and wiser friends, better and more substantial interests. Some of the most distinguished poets have been in early life educated with a view to the law: Reynolds was destined to the practice of physic. But having a natural tendency to limning, he could not nor did he attempt to restrain the impulses of nature. Hence he was deficient in the routine of scholastic learning; but, though he believed that genius and capacity were identical, and that he possessed these in reference to the arts, he did not fall into the seductive fallacy, which sometimes leads genius astray, namely, that fits of inspiration beget skill, and thereby relieve the possessor from earnest and assiduous toil.

From his earliest years, therefore, till he was about nineteen years of age, his time was chiefly taken up in copying such pictures and prints as came within his reach; in taking likenesses of his friends and relations; and in perusing all such books as fell in his way, which treated of painting and perspective. Some of his performances at length struck the attention of his father, who, thereupon, by the advice of his friends, sent Joshua to London, where he began his professional studies under Hudson, the most celebrated portrait-painter of the day, on the 18th of October, 1741, which day is the festival of St. Luke, the reputed patron of painters.

In the practice of portrait-painting, it has been wisely and acutely observed by those who are competent judges of the merit of it, that it is not sufficient to satisfy the judgment, to give merely an exact and mathematical likeness of an individual, if there be not imparted to the picture an expression which shall arouse in the beholder's mind such an idea of vital warmth, as we should entertain if we actually beheld the living prototype of the portrait. In this, we are told Hudson, the preceptor of Reynolds, was essentially deficient; though otherwise a distinguished and accurate maker of portraits: whereas, Reynolds, by connecting the latter excellence with the former, rose, on this ground, to the very top of his profession. He remained with Hudson about three years, and then returned into Devonshire; the separation having probably taken place, in consequence of Reynolds pursuing a style of painting very much out of the ordinary beat. The event, which led to their parting was Reynolds's painting the portrait of an old servant-woman of Hudson's. This picture astonished his master, and obtained unbounded applause in the Gallery.

Having acquired the friendship and patronage of several distinguished persons, Reynolds soon after returned to London, and lived for a while in St. Martin's Lane, which was then the favourite residence of artists, and where something like an Academy was established.

As most of those, which are esteemed to be the best productions of the best painters of the middle ages, are congregated at Rome; and as Rome has, in consequence, been held to be the finishing academy of artists; it was only a natural desire in Reynolds about this time to visit the city of the Seven Hills. In the year 1749, after voyaging about with Commodore Keppel up the Mediterranean, he landed at Leghorn, and proceeded direct to Rome.

It is a most interesting and astonishing circumstance in the history and profession of painting, that Reynolds, and many other distinguished painters, when at Rome for the purpose of viewing, studying, and imbibing the principles of the great masters, should have felt but little impression from them at the early contemplation of their performances. To

describe the feelings of Sir Joshua, as he has ingenuously developed them, would be to pourtray the feelings of many other professed admirers of the fine arts, leaving their ingenuousness out of the question. The keeper of the Vatican told Reynolds that many visitors at Rome, who went to see the paintings, and Raphael's in particular, would ask, when they had seen the whole collection, where the performances of Raphael were to be found?—and would not believe, that they had already passed through the rooms where they were kept. When Reynolds found that others, even the greatest of painters, had stood in the like case with himself, in not all at once admiring and appreciating the merits of Raphael, he felt comforted; and solaced himself with the just and wise reflection, that he himself was then in the midst of works executed upon principles, with which he was at first totally unacquainted; that he had come from a country where the arts were then in a low state; that the name of Raphael, and his admirable paintings, did not owe their reputation to the ignorance and prejudice of mankind: consequently that he himself had come to the Roman School, not to congratulate himself on his own acquirements, but to relearn the principles of his art. In a short time, he tells us, a new taste and perception dawned upon him; that, instead of admiring stiff and extravagant attitudes, he began to feel the sober dignity and majestic simplicity of the illustrious Italian to be more congenial with the feelings of his own soul. Before he left Rome, therefore, he became one of the daily worshippers of these models of excellence in the art. On the other hand, he remarks, that many visitors at Rome, who had no taste or feeling for the art, made pretensions to instantaneous raptures at the sight of Raphael's works.

The whole character and conduct of Reynolds in life was marked by urbanity and courtliness. His behaviour, when thrown into the way of pretenders to the art of painting, is happily sketched by Goldsmith at the conclusion of his "Retaliation." The deafness of Sir Joshua, there alluded to, was brought on by a dangerous illness, which he suffered at Rome.

> To coxcombs averse, yet most civilly steering;
> When they judged without skill, he was still hard of hearing:
> When they talked of their Raphaels, Corregios, and stuff,
> He shifted his trumpet, and only took snuff.

The reader will gain some idea of the taste and genius of Sir Joshua Reynolds, from the frontispiece to the present number. "The Infant Academy" is a happy example of our artist's power in grouping and designing children, and in pourtraying the innocence of youth and childhood. By the will of Sir Joshua, the second choice was given to Lord Palmerston, of any picture of his (Sir Joshua's) own painting; and his lordship chose "The Infant Academy," which has been made known to the world through the engraving by Hayward.

> The wise man, says the Bible, walks with God;
> Surveys, far on, the endless line of life;
> Values his soul, thinks of eternity,
> Both worlds considers, and provides for both:
> With reason's eye his passions guards; abstains
> From evil; lives on hope, on hope, the fruit
> Of faith; looks upward, purifies his soul,
> Expands his wings, and mounts into the sky;
> Passes the Sun, and gains his Father's house,
> And drinks with angels from the fount of bliss.
>
> POLLOK'S *Course of Time.*

THE CALENDAR.

1840.	1. Golden Number	17
	2. Epact	26
	3. Solar Cycle	1
	4. Sunday Letters	E & D
	5. Roman Indiction	13
	6. Number of Direction	29
	7. Julian Period	6553

THE following article is supplementary to an article entitled, "WHAT IS AN ALMANAC?" p. 150, Vol. XV., of this work. The terms used at the head of this paper, are usually denominated the CHRONOLOGICAL AND COMMON NOTES of the Almanac or Calendar.

THE CALENDAR is an adjustment of time, according to rule, for the use of society. The term "Calendar" is derived from an old classic word implying *to call*, from the circumstance of the Pontifex Maximus, the head of the ancient Roman priests, *proclaiming*, on the first day of the month, the date of the appearance of the new moon, and the festivals to be observed throughout the month.

In the early stages of society, the progress of time was estimated by the courses of the sun and moon; the former marking out years, seasons, and days; and the latter, months and weeks.

But, as we observed in the former paper, of the several divisions of time, it has been most difficult to determine with accuracy, the *month* and the *year*; since the revolution of neither the sun nor the moon is completed in an exact number of days. To reconcile the revolutions of the sun and moon, with the common account of time, and to make them agree with each other, was the object held in view upon reforming the Calendar on the following remarkable occasions:—

i. Julius Cæsar, being convinced by the Greek astronomer, Sosigenes, that the year then employed was too short, and that it could never be properly settled but by referring it to the (apparent) annual revolution of the sun, and finding that about ninety days had been lost by the old reckoning, made the first Julian year to consist of 444 days, which was in consequence called the "year of confusion." This year was thus made to terminate at the proper season. The following years, with the months, were then adjusted nearly as they are at present; and, as the year was from that time made to consist of 365¼ days, a day was inserted every fourth year, between the 6th and 5th of the Calends of March, (which days answer to the 24th and 25th of February); so that, the 6th day of the Calends of March being repeated, there were accounted to be *two sixth-days* of the Calends of March, and the day thus inserted was named *bissextus dies*, or the double-sixth day; whence we call Leap-year, in which this addition is made, *Bissextile.*

ii. But, as the year does not consist of *quite* 365¼ days, it was found, in the sixteenth century after the birth of Christ, that the course of the civil year was ten days in advance of the course of the sun. The calendar was, therefore, again corrected by Pope Gregory the Thirteenth, A. D. 1582. This, which is called the new style, was adopted in England, A. D. 1752, as noticed in our former paper. The regulations assumed in this second reformation of the Calendar, are such as, reckoning from the sixteenth century, will make the civil year and the course of the sun to differ after the lapse of 4000 years, only to the amount of *one day!*

THE NOTES given at the head of this article, were the elements employed in the correction of the Calendar; and these we proceed briefly to explain.

1. The GOLDEN NUMBER is the number which any given year holds in the Lunar Cycle, which is a period of nineteen years, at the lapse of which the new moons take place on the same days of the same months respectively as at the commencement of the cycle. Therefore, while the sun performs its annual course nineteen times, those of the moon amount to 235. The importance of this discovery in the regulation of time was held to be so great, that the rule for ascertaining the number of the year in the Lunar Cycle was inscribed in letters of gold on a tablet, set up in the market-place of Athens, in Greece. Hence, the term GOLDEN number. The rule is given in the Calendar which prefaces the Church service.

2. The EPACT is the number of days over and above all the complete courses of the moon, for any number of years, in any part of the Lunar Cycle. Hence, it is the moon's age at the beginning of any year; that is, the number of days which have elapsed since the last new moon in the preceding year.

3. The SOLAR CYCLE is a period of twenty-eight years, which, owing to leap-year, must necessarily pass round before the days of the month can return respectively to the same days of the week as at the commencement of the cycle.

4. The Dominical or SUNDAY LETTER is one of the first seven letters of the alphabet; which letters are used to denote respectively the days of the week, and one of which letters must of course fall to the Sunday throughout the year. But, owing to leap-year, their order is every fourth year disturbed; so that the Solar Cycle must pass round before the letters can fall respectively to the same days of the week. The present being leap-year, there are *two* Sunday letters; the left-hand letter is used till the end of February, and the other till the end of the year.

5. ROMAN INDICTION was a period of fifteen years appointed by the Emperor Constantine, A.D. 312, for the payment of certain taxes from the subjects of the empire.

6. The NUMBER OF DIRECTION. It having been decided by an assembly of Christian bishops at the Council of Nice, in Asia, A. D. 325, that EASTER DAY is always "the first Sunday *after* the Full Moon which happens upon, or next after, the 21st of March," it follows that Easter Day cannot take place earlier than the 22nd of March, or later than the 25th of April; so that from one date to the other (both inclusive) are thirty-five days. The number of direction is that day of the thirty-five, on which Easter-Sunday falls.

7. The JULIAN PERIOD consists of 7980 years; which is produced by the multiplication into each other of the Solar Cycle, the Lunar Cycle, and the Roman Indiction ($28 \times 19 \times 15 = 7680$). This period is reckoned from 709 years before the creation of the world, when the three cycles are supposed to commence together; which circumstance cannot take place again until the lapse of the entire period, A. D. 3267.

The Roman Indiction and the Julian Period are not now of practical use in the Calendar; but the other observations will serve to assist those who wish to understand the Calendar, which is prefixed to the Church service, in the Prayer-book.

BLEST Solitude! when life's gay hours are past,
Howe'er we range, in thee we fix at last.
Tossed through tempestuous seas, the voyage over,
Pale, we look back, and bless thy friendly shore;
Our own strict judges, our past lives we scan,
And ask if virtue has enlarged the span:
If bright the prospect, we the grave defy,
Trust future ages, and contented die.

THE DUCHY OF SAXE-COBURG-GOTHA.

COBURG is a country which has been as yet little visited by travellers, because it does not lie in the course of the great roads; but the fine scenery, the unsophisticated and original old German tone of manners, the economical mode of living, and the celebrity of its reigning family, will probably gradually attract many strangers.

The ducal house of Saxe-Coburg-Gotha is of the Lutheran religion. The reigning duke is Ernest, born January 2, 1784, who succeeded to the throne, December 9, 1806. He was married, first to Louisa, princess of Saxe-Gotha, from whom he was separated in 1826, and who died in 1832, and secondly, in 1832, to Maria, daughter of the late Duke Alexander of Würtemberg. He has two sons, Ernest, the heir apparent, born June 21, 1818, and Albert *, born the succeeding year. Of his two sisters, Julia, married to Prince Constantine of Russia, from whom she was divorced in 1820, is dead; the other is Victoria, duchess of Kent, born August 17, 1786: he has also two brothers, Ferdinand, born 1785, and Leopold, king of the Belgians, born 1790. The former has three sons and one daughter; the eldest son, Ferdinand, is married to Donna Maria, queen of Portugal.

The following is a view of the provinces of the duchy and of their population:—

	Area in Geo. Sq. Miles.	Population, 1832.	Towns.	Market Towns.	Villages.	Houses.
Principality of Coburg	9·50	38,000	4	4	271	5,700
Principality of Gotha	28·10	92,231	5	6½	158	18,250
	37·60	130,231	9	10½	429	23,950

According to the latest census, the entire population amounts to 131,861.

The principal towns are, Gotha (13,006 inhabitants), and Coburg (9067). With the exception of the Jews, all the inhabitants are Germans, and all are Lutherans, except 2000 Catholics and 1000 Jews.

In this duchy, there are three gymnasiums and classical schools, one academical gymnasium, two seminaries for schoolmasters, one ladies' school (at Coburg), thirty-five town schools, and 300 village schools. The revenue is 1,100,000 florins. The public debt amounts to 3,000,000 florins. The contingent to the army of the confederacy is 1366 men.

The government is a constitutional monarchy: the representatives form one chamber only. Gotha, however, has still its old diet (three classes in one chamber). The qualification to vote for a deputy of the nobles is constituted by the possession of a seignorial estate (*Rittergut*). For the deputies of towns, every citizen is entitled to vote who has never been a bankrupt, and who has not been punished for transgression of the laws.

In the villages, the householders form the constituency. The deputies must be of the Christian religion, citizens of the state, thirty years of age, and men of unblemished reputation. Those of the towns and villages must have either an estate free from incumbrances, worth 5000 florins, or an annual income of 400 florins. Officers of the government appointed for the purpose, superintend the election of the knights and of the citizens: in the villages, the elections are superintended by the ordinary officials.

The ministry is composed of one minister of state, and of three privy-councillors.

The highest court of justice is the supreme court of appeal; the lower courts are the colleges of justice at Coburg and Gotha; and finally, throughout the

* The husband-elect of our gracious sovereign Queen Victoria. ED. *Sat. Mag.*

GOTHA.

country, justice is administered by bailiffs, magistrates, and patrimonial judges.

The chief officers of the court are, a first marshal of the court, and a grand equerry.

The present Duke of Saxe-Coburg-Gotha was formerly Duke of Saxe-Coburg and Saalfeld, but, in 1826, he ceded the latter, and obtained the duchy of Gotha, with exception of the lordship of Kranichfeld. After this change of territory, one of the first acts of his government was the creation of a privy-council, consisting of the officers of government both in Coburg and Gotha. A decree of October 30, 1828, established in each duchy a separate college of justice, which takes cognizance of matrimonial matters, formerly falling under the jurisdiction of the consistorial court. Each duchy has its own system of internal administration, taxation, and excise. On the other hand, for both Coburg and Gotha, there is only one high consistorial court for ecclesiastical affairs and for public instruction, and only one war-office. According to the new regulations, the fees which were formerly claimed by the officials, are now the property of the state. In 1830, a journal was established for the more prompt promulgation of laws and edicts. On the 1st of July, 1829, the army was reorganized, so that the soldiers of both duchies (1366 in number) were made to form one infantry regiment of the line, divided into two battalions.

The funds for the preservation and increase of the books, pictures, and coins, at Gotha, have been lately enlarged. The government has particularly distinguished itself in encouraging trade and commerce. Monopolies were abolished in Coburg, so early as 1812; in Gotha, in 1829. Exhibitions of home products and trade schools have been established; and all impediments to commerce have been removed.

The French revolution of 1830, produced a temporary sensation in Coburg and Gotha, which led to no important results. But in the distant principality of Lichtenberg, which had been ceded to the duke by the Congress of Vienna, in 1816, its effects were such as not only to disquiet the inhabitants, but also to weaken the moral force of the government. Awakened by these circumstances to a sense of the difficulty of governing a separate territory, inhabited by a restless population, the Duke of Saxe-Coburg-Gotha has since sold the principality of Lichtenberg to the King of Prussia.

In this duchy no preference is given to birth in electing officers of state. Difference of religion does not affect the equal enjoyment of political rights. Every citizen is bound to serve for a certain period in the army, should he be chosen by lot, or to find a substitute. No citizen can remain in arrest for the space of twenty-four hours without being informed of the cause of his apprehension.

The territories of the Duke of Gotha lie in Thuringia; they are extremely fertile, well cultivated, and thickly populated. Agriculture is their principal source of prosperity. The northern districts are plains, intersected by chains of hills; the south is mountainous and woody.

The principal products are corn, potatoes, carrots, and other vegetables, flax, poppies, aniseed, woad, and an immense quantity of wood, which is the staple article. A few hops are grown; there is not much fruit, and the wine is only made for vinegar. There are plenty of pigs and poultry, but the horses are of an inferior breed. The country contains mines of iron, manganese, coal, and slate. There are numerous worsted-spinners and linen-weavers, particularly in the hilly districts. There are also woollen and cotton manufactories, but they are not very numerous. Other articles of manufacture are iron-ware, wire, copper goods, stockings, tobacco, glue, leather, and soap. There are five paper-mills, three porcelain, and three hardware manufactories.

The exports are corn, wood, wool, woad, manganese, pitch, potash, bilberries, coriander-seeds, aniseed, butter, linen, iron goods, sausages, and livers of geese.

Coburg, the capital of the principality of Coburg, and formerly the residence of the duke, is situated in a delightful country; it contains more than 800 houses, and about 9000 inhabitants. One of the most prominent public buildings is the palace of

Ehrenburg, in which the present duke has made large improvements. It now contains a library, a cabinet of natural history, of medals and prints, and an armoury. In the neighbourhood of the town is the castle of Coburg, which contains a workhouse and a house of correction. In the town itself is a gymnasium, supplied with a library, with specimens of natural history, and medals. There are a senate house, an orphan asylum, a casino, an armoury, and a government house, built in an Italian style of architecture. Amongst the curiosities of the place are Luther's room, which contains some beautiful woodwork, and the alabaster monument of Duke John Frederic, in the church of St. Maurice. The principal places of amusement are the theatre, the casino, the redoute, and the musical club. In the neighbourhood are the beautiful old and new walks, the ruins of the castles of Callenberg and Lauterburg, and the lovely seat of the duke, the Rosenau.

Gotha, the capital of the duchy of Gotha, and also a residence of the present duke, contains about 1300 houses, and 13,000 inhabitants. The palace of Friedenstein contains a very good library, a collection of coins, a museum of natural history, a Chinese cabinet, a picture gallery, and remarkable collections made by the late duke,—the whole forming a treasure of literature and art, such as few moderate towns can boast of. In 1824, the museum, which was given to the country by the late duke, Frederic, was opened. The ducal libraries contain 150,000 volumes. The walls and fortifications of the town have been changed into ornamental walks. Near the town is the observatory on the Seeberg, 1189 feet above the level of the sea. In the neighbourhood, too, is the palace of Friedreichsthal, containing some valuable monuments of Italian art, and the orangery and park, where the Dukes Ernest and Augustus are buried.

The chief places of amusement and public resort here, are the theatre, ball-rooms, and public gardens. In the neighbourhood of Gotha are two ducal palaces, and the Moravian colony of Neudietendorf.

The house of Saxe-Coburg is indisputably the most fortunate of all the existing great families of Europe. No common lot has attended them in our time, and they appear destined to fill a remarkable place in modern history. The reigning duke has succeeded to the inheritance of the duchy of Saxe-Gotha, which he enjoys in addition to his original sovereignty of Coburg. His brother, Leopold, was born under an extraordinary star; he first married the heiress to the British throne, and subsequently a daughter of the King of the French; two ladies not less amiable than elevated; and, after declining the throne of Greece, he has been chosen King of Belgium. One sister espoused the Archduke Constantine of Russia, and thus in the ordinary course of events would have become Empress of all the Russias. The history of another sister, the Duchess of Kent, is too well known to require comment; she is the mother of the Queen of England. Another brother has married one of the greatest heiresses of the Austrian empire, the daughter of the Prince of Kohary, and occupies the high post of lieutenant field-marshal, in the service of the emperor. Finally, a nephew of the Duchess of Kent is the reigning King of Portugal. An impartial review of the progress of this distinguished race compels us to add that it does not owe its success to unworthy intrigue; its members bear their great estate with prudence, with good sense, and with moderation; and their domestic qualities form an antidote to the venom which generally pursues a career of success.

From *Germany; the Spirit of her History, Literature, Social Condition, and National Economy, &c.* By Dr. BISSET HAWKINS.

THE LAND OF CONTRADICTIONS.

THERE is a land in distant seas
Full of all contrarieties.
There beasts have mallard's bill and legs,
Have spurs like cocks, like hens lay eggs.
There parrots walk upon the ground,
And grass upon the trees is found;
On other trees—another wonder—
Leaves without upper side or under.
There pears you'll scarce with hatchet cut;
Stones are outside the cherries put;
Swans are not white, but black as soot.
There neither leaf, nor root, nor fruit,
Will any Christian palate suit;
Unless in desperate need you'll fill ye
With root of fern and stalk of lily.
There missiles to far distance sent
Come whizzing back from whence they went.
There a voracious ewe-sheep crams
Her paunch with flesh of tender lambs;
While, stead of bread, and beef, and broth,
Men feast on many a roasted moth.
There quadrupeds go on two feet,
And yet few quadrupeds so fleet.
There birds, although they cannot fly,
In swiftness with the greyhound vie.
With equal wonder you may see
The foxes fly from tree to tree;
And what they value most, so wary,
These foxes in their pockets carry.
There courting swains their passion prove
By knocking down the girls they love.
There every servant gets his place
By character of foul disgrace;
There vice is virtue, virtue vice,
And all that's vile is voted nice.
The sun, when you to face him turn ye,
From right to left performs his journey.
The north winds scorch, but when the breeze is
Full from the south, why then it freezes.
Now of what place can such strange tales
Be told with truth but New South Wales?

FOR men to judge of their condition by the decrees of God which are hid from us, and not by his word which is near us and in our hearts, is as if a man wandering in the wide sea, in a dark night when the heaven is all clouded about, should yet resolve to steer his course by the stars which he cannot see, but only guess at, and neglect the compass, which is at hand and would afford him a much better and more certain direction.—TILLOTSON.

THE brave only know how to forgive; it is the most refined and generous pitch of virtue human nature can arrive at. Cowards have done good and kind actions, cowards have even fought, nay, sometimes even conquered; but a coward never forgave: it is not in his nature; the power of doing it flows only from a strength and greatness of soul, conscious of its own force and security, and above the little temptations of resenting every fruitless attempt to interrupt its happiness.—STERNE.

THE knowledge we acquire in this world I am apt to think extends not beyond the limits of this life. The beatific vision of the other life needs not the help of this dim twilight; but be that as it will, I am sure the principal end why we are to get knowledge here, is to make use of it for the benefit of ourselves and others in this world; but if by gaining it we destroy our health, we labour for a thing that will be useless in our hands; and if by harrassing our bodies, (though with a design to render ourselves more useful,) we deprive ourselves of the abilities and opportunities of doing that good we might have done with a meaner talent, which God thought sufficient for us, by having denied us the strength to improve it to that pitch which men of stronger constitutions can attain to, we rob God of so much service, and our neighbour of all that help, which, in a state of health, with moderate knowledge, we might have been able to perform. He that sinks his vessel by overloading it, though it be with gold and silver, and precious stones, will give his owner but an ill account of his voyage.—LOCKE.

THE NATURAL HISTORY OF THE MONTHS.

I. JANUARY.

Then came old January, wrapped well
In many weeds to keep the cold away;
Yet did he quake and quiver like to queil;
And blowe his nayles, to warm them if he may:
For they were numbed with holding all the day
An hatchet keene, with which he felled wood,
And from the trees did lop the needlesse spray.—SPENSER.

THIS month derives its name from JANUS, a deity represented by the Romans with two faces looking in opposite directions, and typical of the past and the future. JANUS was the god of gates and avenues, and held a key in one hand, and a rod in the other, symbolical of his opening and ruling the year. This month is chosen as the commencement of the year, in preference to March, when the ancient year began, probably because the lengthening of the days being the chief cause of the return of Spring, may therefore be considered in reality as its commencement. The time of the renewal of nature varies greatly in different countries, but in our own there is certainly less appearance of such a change in the month of January than at any other period; for "as the days begin to lengthen, the frost begins to strengthen."

The weather during this month is frequently clear, cold, and bright, and the beautiful effects of hoar-frost are often sufficient to give animation to a landscape, which would otherwise look blank and dreary. Every branch and spray is fringed with delicate crystals, sparkling in the sun's rays with the lustre of diamonds; and there is not a single blade of grass, or a plant, however insignificant, but may become, when adorned with these radiant gems, the object of our highest wonder and admiration. The very weeds which we are accustomed to pass unnoticed, or to tread beneath our feet,

Now shine
Conspicuous, and in bright apparel clad,
And fledged with icy feathers, nod superb.

All those effects which are produced by the transient morning dew of summer, are now exhibited, and still more strikingly, in the brilliant hoar-frost; and were it not that the constant recurrence of the wondrous scene has taught us to look on it with some degree of indifference, we could not fail to be struck with feelings of admiration and delight. In the remembrance that

Nature is but a name for an effect,
Whose cause is God,

such a scene is well calculated to inspire us with enlarged ideas of the power of that wonder-working Hand, which, whether in the vast or in the minute, is equally faultless in performance, inexhaustible in resource, infinite in variety, and unwearied in operation. The examination of a blade of grass, or even of a spider's web, laden with this frozen dew, will prove how inimitably beautiful, and passing human art to imitate, are the least of the works of God.

The beautiful hoar-frost is nevertheless only one of the effects of the absence of heat during this season of the year. As the cold increases, the surfaces of rivers and lakes become fixed, and converted apparently into floors of marble, and during this change the water expands, and in its solid state occupies more space, at the same time that it becomes lighter than before. This remarkable circumstance appears at first sight to contradict the general law of the expansion of bodies by heat, and their contraction by cold, that is, by the diminution of heat; but the difficulty is lessened by considering that water *does* contract by cold, according to this law, within a certain limit, and that having reached this limit, and become condensed in the greatest degree of which it is susceptible by cold alone, a re-arrangement of particles takes place, "by which the crystalline form of the solid which is about to be produced occupies more space than the particles in the liquid form." "Now supposing," says Mr. Tomlinson, "that water regularly contracted from its liquid to its solid state, it is quite clear that a certain bulk of ice would occupy less space than the bulk of water which formed it. Its weight would be, in short, bulk for bulk, greater than that of water, and it would consequently sink; and our streams in winter, instead of the superficial crust of ice which covers them, and which is easily thawed, would become one solid mass of ice, destroying all that life with which the waters teem, and would take a whole summer to become again liquid, since water is so imperfect a conductor of heat."

One effect of this property of water to expand during the process of congelation is to diminish the height of mountains; for the rain and melted snow remaining in their cavities and fissures during the summer season, become frozen, and seeking to occupy a greater space than before, force out masses of rock with irresistible power, and send them thundering down to the valley beneath. Another, and a generally useful effect, is the preparation of the earth to receive its destined seed, in consequence of the crumbling to pieces of the heavy clods of the field, by the expansion of the frozen moisture within them.

At the time when the frost is severe enough to produce these effects, how beautiful, how elegantly diversified, are the forms it assumes on the windows of our apartments, where we may sometimes fancy a resemblance to the fretted roof and clustered columns of some ancient building, or trace what may seem "the sparkling trees and shrubs of fairy-land," or seek in vain, among its thousand capricious shapes, "the likeness of some object seen before." These beautiful appearances are due to the condensation of moisture from the atmosphere of our dwellings, on the cold panes of glass, and its subsequent expansion into crystals. The same kind of starry crystals are found in the frozen water of the clouds, or snow, which forms a covering for the earth of unrivalled purity, and affords protection from the extreme severity of the frost to the plants which lie beneath it.

But while the plants are thus protected from the rigour of the season, how fares it with the minstrels of the grove? where do they find a substitute for the leafy shelter of the trees, and how are they able to supply their wants, when the rivers are frost-bound, and the land covered with a fleecy deluge? Doubtless when the frost is of long continuance, thousands of them die of cold and hunger, or become the prey of man, as they venture near to shelter themselves in the warm neighbourhood of his dwelling. Blackbirds, thrushes, and fieldfares, nestle together in banks, and under hedges, and frequent the vicinity of towns. Larks find shelter in the warm stubble, and tribes of small birds courageously surround our houses, and take possession of our farm-yards, in search of their precarious sustenance. The yellow-hammer, the chaffinch, but especially the audacious sparrow, beset our path, and seem to claim a share in the food with which we are so abundantly supplied; while the friendly redbreast seeks and finds a welcome everywhere. Redwings, fieldfares, skylarks, &c., find a partial supply in wet meadows, and along the water's edge, while these remain unfrozen. The ringdove subsists on ivy-berries; water-fowl quit the frozen marshes for the neighbourhood of rapid streams, where the swiftly-passing-current escapes its icy fetters, and leaves its richly embroidered banks to display the wonders of the mighty agent. Sea-birds

also leave the shore, and frequent the larger rivers, while nearer home we observe the effect of the severe weather in the sad and half-petrified appearance of the cattle, which are seen creeping to the corner which seems best adapted to shelter them from the keen air, and waiting in mournful silence for their customary supply of fodder. Many animals remain in a death-like state of torpor, during the winter, and many others sleep away the greater part of the season, receiving nourishment from the fat which they had acquired in summer. Thus it happens that the bear, marmot, &c., come out in the spring greatly emaciated, but during summer they gain so much in bulk as to be able to undergo another season of torpor.

Intense cold and deficiency of food embolden the fox, the weasel, the polecat, and other predatory quadrupeds to attack the hen-roost and the farm yard. The fearful attacks of hungry wolves are happily known to us only by tradition in our own country, or by the reports of travellers in Alpine lands. Even the timid hare approaches the abodes of man to feed on the garden vegetables. Rabbits greatly injure the young trees by nibbling off the bark as high as they can reach. The tit-mouse seeks food in the thatched coverings of houses and walls, and the farmer keeps his early lambs and calves within doors, tending them as carefully and as gently as his own children.

The vegetable kingdom too has put on winter dress or retired to winter quarters. The roots of herbaceous plants are safe under ground, ready at the return of warmth to throw up their young shoots. The soft and tender parts of shrubs and trees, are wrapped up in hard buds; the larger kinds of which, such as those of the horse-chesnut, the sycamore, and the lime, are covered with a sort of resin which resists the most intense cold. Sometimes, however, a tree which is less securely guarded than its fellows by those kind provisions of nature, has its juices frozen, and it then spilts asunder by the formation of the ice, and perishes. By the end of the month the leaves of the woodbine appear ready to expand; the winter aconite and bear's foot are often in flower, and in sheltered situations the red dead-nettle and groundsel. The snow-drop is preparing its modest bell and the catkins of the hazel begin to open.

On mild days the slug or shell-less snail is moving about to the injury of the young wheat and garden plants. The bodies of these animals are covered with slime, as the whale is with blubber; this non-conducting substance enables them to withstand the cold.

The frost suspends most of the out-door work of the farmer. His team can now move over the frozen fields as easily as on the high-road; he, therefore, carries out manure to his fields; or he lops his timber, or repairs hedges. The labourer warms himself in the barn by the constant use of the flail; or when work is over, he retires to his snug chimney corner, and if honest and industrious, he need not fear the want to his family of "meat, clothes, and fire." But still there is no season of the year in which charity is more efficacious than in this. Those who from their warm and snug retreats hear the cold wind without, should think upon their poorer fellow-creatures and relieve their necessities.

Rivers and canals are no longer the high-roads for watermen and bargemen: these are out of employment, while troops of skaters and sliders usurp the domain of the boat and the barge.

It was at such a season as this that the pious Krummacher composed his WINTER LAY of which we offer the following translation.

Ah! why repoosest thou, so pale,
So very still in thy white veil,
Thou cherish'd Father-land?
Where are the joyous lays of spring,
The varied hue of summer's wing,
Thy glowing vestment bland?

But half-attired, thou slumberest now,
No flocks to seek thy pastures go,
O'er vales or mountains steep:
Silent is every warbler's lay,
No more the bee hums through the day,
Yet art thou fair in sleep!

On all thy trees, on every bough,
Thousands of crystals sparkle now,
Where'er our eyes alight;
Firm on the spotless robe we tread,
Which o'er thy beauteous form is spread,
With glittering hoar-frost bright.

Our Father kind, who dwells above,
For thee this garment pure hath wove,
He watches over thee.
Therefore in peace, thy slumber take,
Our Father will the weary wake,
New strength, new light to see.

Soon to the breath of spring's soft sighs,
Delighted thou again wilt rise,
In wond'rous life so fair.
I feel those sighs breathe o'er the plain,
Dear Nature, then rise up again
With flower-wreaths in thy hair.

MIGRATION OF HERRINGS.

THE great winter rendezvous of the herring is within the arctic circle, and there they spend many months of the year. In the spring, this mighty army begins to put itself in motion. We distinguish the united shoals by that name, because the word herring comes from the German *heer*, an army, and expresses their number. They begin to appear off the Shetland Isles in April and May; these are only the forerunners of the great shoal which comes in June; and their appearance is marked by the numbers of birds, as gannet, and other sea-fowl, which come to prey upon them. When the main body appears, its breadth and depth are such as to alter the appearance of the very ocean. It is divided into distinct columns of five or six miles in length, and three or four in breadth, and they drive the water before them with a kind of rippling: sometimes they sink, for the space of ten or fifteen minutes, and then rise again to the surface: and in fine weather reflect a variety of splendid colours, like a field of the most precious gems; in which light this gift of Providence ought in very truth to be viewed.

The first check this army meets with, in its journey south, is from the Shetland Isles, which divide it into two parts; one wing takes to the eastern, the other to the western, shores of Great Britain, and fill every bay and creek with their numbers; others pass on towards Yarmouth, the great and ancient mart of herrings; they then pass through the British Channel, and after that disappear. The other wing, which takes a westerly direction, after presenting themselves at the Hebrides, where the great stationary fishery is, proceed to the north of Ireland, where they meet with a second interruption, and are obliged to divide again; one party takes the west of Ireland, and is soon imperceptible in the immensity of the Atlantic; but the other shoal passing into the Irish Sea feeds the inhabitants of its coasts. These last are often capricious in their motions, and do not, like the grand body, show an invariable attachment to their old haunts. The object which induces this yearly migration, is the spawning, or depositing of their eggs.

Herrings are found, also, in vast shoals, on the coasts of America, as low down as Carolina. Chesapeak Bay is inundated with them. We find them also in Kamtschatka, and they probably visit Japan. The Dutch are passionately fond of pickled herrings, and the first boat that arrives, is entitled to a prize. The herring dies as soon as it is taken out of the water; hence the proverb *as dead as a herring*. The Dutch call a merry-andrew, *pickle-herring*, and from this, also, we borrow some colloquial expressions.

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THE TIMBER-FLOATS OF GERMANY AND ITALY.

FLOATING TIMBER IN LOMBARDY.

Probably but few of our readers think of the means by which *timber* is conveyed from the forest where it grows, to the spots where it is to be applied to the purposes of building. And yet it must be evident that the means of transport form a matter of no small importance. We know that our timber-yards are plentifully supplied with the various kinds of wood necessary for building; and that the timbers are shaped by the axe and the saw. But, in most cases, the wood which we employ is brought from foreign countries, often many miles inland. It is conveyed across the ocean in ships; but the mode of transporting it from the forests where it grows to the ports where it is to be shipped, is a curious subject, and one well worthy of a little attention.

The main circumstance that forms the groundwork of all the plans adopted for this purpose is, that nearly all kinds of wood are, bulk for bulk, lighter than water, and will consequently swim on its surface. Now as all countries are, more or less, intersected by rivers, which flow from the interior into the sea, a very simple and economical mode of transport for timber is at once attained, by causing it to float down running streams, either by the mere force of the descending water, or aided by mechanical agents. There is no necessity that each piece of wood should be floated separately down the stream; for they may be fastened together, and steered down the middle of the river, in the form of a long and broad raft.

Beckmann says:—

It is probable that the most ancient mode of constructing vessels for the purpose of navigation, gave rise to the first idea of conveying timber in the like manner; for the earliest ships or boats were nothing else than rafts, or a collection of beams and planks bound together, over which were placed deals. By the Greeks they were called *schedai*, and by the Latins *rates*; and it is known, from the testimony of many writers, that the ancients ventured out to sea with them, on piratical expeditions, as well as to carry on com-

merce; and that after the invention of ships, they were still retained for the transportation of soldiers and of heavy burdens."

There are some passages in the Bible which allude to the floating of wood. 1 Kings v. 9: "My servants shall bring them down from Lebanon unto the sea; and I will convey them by sea in floats unto the place that thou shalt appoint me." 2 Chron. ii. 16: "And we will cut wood out of Lebanon, as much as thou shalt need; and we will bring it to thee in floats by sea to Joppa, and thou shalt carry it up to Jerusalem." These passages relate to a compact between Solomon and Hiram, king of Tyre, by which the latter was to cause cedars for the building of the Temple to be cut down on the western side of Mount Lebanon, above Tripoli, and to be floated to Jaffa or Joppa, probably along by the sea shore.

The Romans transported by water, both timber for building and fire-wood. When, during their wars against the Germans, they became acquainted with the qualities of the common *larch*, they caused large quantities of it to be carried on the river Po, to Ravenna from the Alps, particularly the Rhætian, and to be conveyed also to Rome, for their most important buildings. Vitruvius says, that this timber was so heavy that the waters could not support it, and that it was necessary to carry it in ships or on rafts. Could it have been brought to Rome conveniently, says he, it might have been used with great advantage in building. It has also been supposed that the Romans procured fire-wood from Africa, and that it was brought partly in ships and partly on rafts.

But it is in Germany that the transportation of timber by means of floats has been most extensively carried on, partly on account of its noble forests, and partly through the possession of the river Rhine. There is evidence of floating of timber-rafts in Germany as far back as the year 1410. A letter from the Landgrave of Thuringia says, that on account of the scarcity of wood that existed in their territory, the landgraves had so far lessened the toll usually paid on the river Sale as far as Weissenfels, that a Rhenish florin only was demanded for *floats* brought on that river to Jena, and two Rhenish stivers for those carried to Weissenfels; but the proprietors of the floats were bound to be answerable for any injury occasioned to the bridges.

In 1438, Hans Munzer, an opulent citizen of Freyberg, with the assistance of the then burgo-masters, put a float of wood upon the river Mulda, which runs past the city, in order that it might be conveyed thither for the use of the inhabitants: this seems to imply that such a practice was not then uncommon. When the town of Aschersleben was adorned with a new church, in 1495, the timber used for its construction was transported on the Elbe, from Dresden to Acken, and from thence on the Achse to the place of its destination. In the year 1564, there was a float-master in Saxony, who was obliged to give security to the amount of four hundred florins; so that the business of floating must, at that time, have been of considerable importance.

When the citizens of Paris had used all the timber growing near the city, the enormous expense of land carriage, led to the suggestion of an improved mode of transport. John Rouvel, a citizen and merchant, in the year 1549, proposed to transport timber, bound together, along rivers which were not navigable for large vessels. With this view he made choice of the forests in the woody district of Morvant, which belonged to the government of Nivernois; and as several small streams and rivulets had their sources there, he endeavoured to convey into them as much water as possible. This great undertaking, at first laughed at, was completed by his successor, René Arnoul, in 1566. The wood was thrown into the water in single trunks, and suffered to be driven in that manner by the current to Crevant, a small town on the river Yonne; where each timber-merchant drew out his own, which he had previously marked, and, after it was dry, formed it into floats that were transported from the Yonne to the Seine, and thence to the capital. By this method large quantities of timber were conveyed to the populous towns.

A similar mode of transporting timber from the central parts of Germany to the great towns or to the sea ports, is practised at the present day. Mr. Planché, in his *Descent of the Danube*, says:—

Below this bridge, (at Plattling on the Danube,) the raft-masters of Munich, who leave that city every Monday for Vienna, unite their rafts before they enter the Danube. They descend the Isar upon single rafts only; but upon reaching this point they lash them together, in pairs, and in fleets of three, four, or six pairs, they set out for Vienna. A voyage is made pleasantly enough upon these floating islands, as they have all the *agrémens*, without the confinement, of a boat. A very respectable promenade can be made from one end to the other, and two or three huts erected upon them afford shelter in bad weather, and repose at night.

But the anonymous author of *An Autumn near the Rhine* gives a more detailed account of the timber-rafts of Germany, of which we will avail ourselves. A little below Andernach, on the banks of the Rhine, the little village of Namedy appears on the left bank, under a wooded mountain. The Rhine here forms a little bay, where the pilots are accustomed to unite together the small rafts of timber, floated down the tributary rivers into the Rhine, and to construct enormous floats, which are navigated to Dordrecht and sold. These machines have the appearance of a floating village, composed of twelve or fifteen little wooden huts, on a large platform of oak and deal timber. They are frequently eight or nine hundred feet long, and sixty or seventy in breadth. The rowers and workmen sometimes amount to seven or eight hundred, superintended by pilots and a proprietor, whose habitation is superior in size and elegance to the rest. The raft is composed of several layers of trees, placed one on the other, and tied together. A large raft draws not less than six or seven feet water. Several smaller ones are attached to it, by way of protection, besides a string of boats, loaded with anchors and cables, and used for the purpose of sounding the river, and going on shore. The domestic economy of an East Indiaman is hardly more complete. Poultry, pigs, and other animals, are to be found on board, and several butchers are attached to the suite. A well-supplied boiler is at work night and day in the kitchen. The dinner-hour is announced by a basket stuck on a pole, at which signal the pilot gives the word of command, and the workmen run from all quarters to receive their allowances.

The consumption of provisions in the voyage to Holland is almost incredible, sometimes amounting to forty or fifty thousand pounds of bread, eighteen or twenty thousand pounds of fresh meat, a considerable quantity of salt meat, and butter, vegetables, &c., in proportion. The expenses are so great, that a capital of three or four hundred thousand florins is considered necessary to undertake a raft. Their navigation is a matter of considerable skill; owing to the abrupt windings, the rocks and shallows of the river; and some years ago the secret was thought to be monopolized by a boatman of Rudesheim and his son.

Dr. Granville, in his *Journey to St. Petersburgh*, has also given a description of this remarkable floating

timber village, which he has also illustrated by an engraving.

The subject of our frontispiece is the first beginning of such a raft. The bridge is called Pont d'Alto, and is situated near Agordo, in the Venetian Lombardy district of Belluno. Under this curious wooden bridge flows a small stream, which empties itself into a larger. The surface of this stream is seen to be covered with scattered pieces of timber, which have been brought down from forests near the banks, and precipitated into the stream. When these timbers, whose number receives constant accessions in the journey, reach a particular spot, they are all bound together, to form one continuous raft, and in that form floated to the place of their destination.

A DISCOURSE ON GEOLOGY.

I.

Nature of Geology.

"Curiosity," it has been well observed, "is one of the most distinctive faculties of the human mind; one of those which establish a marked separation between man, and the rest of the animal creation:"

——— For of all
The inhabitants of earth, to man alone
Creative Wisdom gave to lift his eye
To truth's eternal measures.

But though curiosity, or the love of investigation, is one of man's best faculties when directed to an end really worthy of him, it is capable of being misdirected and misapplied. It becomes, therefore, of paramount importance that this principle, so active in all intelligent minds, should be guided into channels, where it may not only find free scope for its exercise, but the most exalted ends for its ultimate object. Such are "the sacred paths of nature and of science." The grandest discoveries, and the inventions of the greatest use to mankind,—the sublime truths of astronomy, electro-magnetism, the steam-engine, the telescope, the microscope,—are all the result of long-continued research, ennobled by their object; and the same principle is still stimulating us to extend the range of our knowledge, and to fathom the hidden mysteries of nature.

In modern times, science appeared to have made such great progress, that we scarcely could have expected any new track would have been opened equally rich in discoveries with those disclosed by the telescope or the microscope. Yet the investigation of the ground we daily tread under foot, has, during the last half century, in the hands of Smith, Cuvier, and a host of other scientific men, become a science peculiary fertile in novelties, not only deeply interesting to the geologist, but strikingly attractive to all who look with wonder and curiosity on the visible works of the Creator.

Geology, indeed, may be regarded as a science necessarily dependant on the advanced state of the natural sciences; for its conclusions have only been established by these means, and it can scarcely be said to have existed as a science until chemistry, zoology, botany, and mechanics, were applied to the explanation of the phenomena it presents. A general acquaintance with science is, therefore, of the greatest possible advantage to the geological student. Yet, nevertheless, to those unpossessed of these acquirements, geology may form a highly engaging pursuit; for it is a science of observation, and is directed to objects immediately within our reach,—to the rocks and cliffs on the shore; to the beds exposed to our view in the excavations of a road; to the very pebbles scattered in our path *,—all of which will derive an infinitely higher interest, if regarded with reference to the phenomena of geology, and to those changes which have been instrumental in imparting to them their actual form, or present arrangement.

Sir John Herschel tells us, that geology, in the magnitude and sublimity of the objects of which it treats, undoubtedly ranks in the scale of the sciences next to astronomy. To those who are in some measure acquainted with the immensity of the field into which astronomy guides her votaries, but to whom geology is as yet "a sealed book," this assertion may appear to assign too exalted a station to the latter science. The distances treated of in astronomy are so immense, and the time required for the completion of some of the celestial cycles so vast, that they elude the grasp of our comprehension: "What, then, is there in geology," may such inquire, "to compete with the myriads of years to which astronomy directs our attention?" To this the geologist will reply, that by careful researches into the rocks and beds of the earth, we learn that periods approaching to, if not equalling the myriads of years of the astronomer, have apparently been required for the accomplishment of all the changes on the surface of the globe. And if geology may yield to astronomy in the vastness of the space over which it ranges, and in the former science our views are confined to the observation of only a limited portion of one small planet, the indications it displays of the Mighty Hand that rules the universe, are scarcely less striking, and perhaps fully as impressive, from their capability of being brought more immediately under our own inspection.

The difference between the sciences of astronomy and geology may be compared to that of the discoveries effected by the telescope and the microscope:—the one reveals to us objects of vast magnitude concealed from us by their immense distance; the other discloses objects hidden from us by their almost incomprehensible minuteness.

Geology shows us that "the configuration of the earth's surface has been re-modelled again and again; mountain chains have been raised or sunk; valleys have been formed, again filled up, and then re-excavated; sea and land have changed places. Yet throughout all these revolutions, animal and vegetable life has been sustained: these changes in the condition of the earth having been accompanied by corresponding changes in organic bodies, adapting them to those altered conditions;—the succession of living beings having been continued by the introduction into the earth from time to time of new plants and animals, evidently admirably adapted for successive states of the globe †."

It being, then, an ascertained fact, that we repeatedly see the commencement of new races, we are obliged again and again to have recourse to a supreme Intelligence and a creative power. "If we examine the marine remains of the strata, we find that whole genera of shells, which in the present seas are most abundant in species, were not in existence till after the chalk was deposited. Other genera again originated about the middle of the series, and soon became extinct, being represented by no species in the Tertiary strata, that is, the strata above the chalk. These new creations supplied the place of other races which perished; for some genera are peculiar to the lower groups of rocks, not a single

* The author has, not unfrequently, met with well preserved fossils among the pebbles of a garden gravel walk

† Lyell, *Address to Geological Society.*

species of them occurring higher in the series than the coal-measures. There are a few, and but a few, genera, which, commencing in the lowest fossiliferous strata, have endured through all the changes to which the earth has been subject, and have species existing in the present seas. The changes which occurred in the organization of fishes appear to have been greater and more rapid, and exhibit a wider difference between those found above and below the chalk, than is observable in the case of molluscs.

"The same proofs of organic changes are afforded by the study of fossil botany. The formations containing vegetable remains may be arranged, according to Professor Henslow, in four groups, representing epochs, during any one of which no very marked difference is observable in the general character of the vegetation; but between any two of these groups the change is striking and decided, most of the genera being different, and none of the species alike.

"We can scarcely be said, at present, to have sufficient data for determining what were the animals inhabiting the land while the earlier strata were being deposited at the bottom of the sea. It is evident that some of our oldest rocks have been derived from the waste of pre-existing land; and, as that land appears to have been clothed with its appropriate vegetation, we have no right to suppose that it was destitute of its appropriate animals. A great ocean like the Pacific, interspersed, like it, with small islands, appears to have prevailed, during the formation of the older strata, over that part of the Northern Hemisphere in which are situated those countries whose geology has been most explored. Small oceanic islands do not, at the present day, contain many mammalia, while they are wholly destitute of the larger kinds; and the discovery of such remains, in an oceanic sediment, after its conversion into dry land, must be an event of very rare occurrence; for however abundant mammalia might be on some distant continent, by the rivers of which their carcases would be drifted down, yet before they could be floated out far to sea, they would be almost certain to be devoured by the carnivorous monsters of the deep; and even supposing them to escape this fate, the chances are very much against the discovery of the spot where these rare remains are concealed, after the bed of the ocean shall be laid dry.

"But whether mammalia existed during the earliest epochs of the world of which we possess geological monuments, and were contemporary with those marine animals imbedded in the lower strata, though, for the reasons above stated, their remains have not yet been discovered; or whether they were not created till a later period, though still before the deposition of the chalk, it is certain that during the tertiary era, when their remains were abundantly entombed in the strata, we can trace the introduction of new races even of those animals. The remains of the land quadrupeds imbedded in the olden Tertiary strata, are chiefly those of extinct *genera*. In the deposits of a more recent period we meet, in these northern latitudes, with the remains of extinct *species* of genera now existing, but existing only in warm climates, such as the elephant, rhinoceros, hippopotamus, &c. And at length we come to peat bogs and alluvial deposits, in which human remains occur, mixed with those of animals now living in the countries where the remains are found, together with a few which have become locally extinct, within the historic period.

"But if the earth's crust furnishes us with evidence, that great and repeated changes have taken place in the organic and inorganic world, it furnishes us with proofs no less clear, that great epochs of time elapsed while these changes were in progress,—epochs so great, that we are tempted to connect them with the secular periods of astronomy to which we have before alluded. There is, however, this difference between the phenomena of astronomy and geology; that in the former, we have a series of events recurring, in a fixed order, after the lapse of fixed intervals of time, whereas in geology, (if we except the interchange between land and sea, and the recurrence of volcanic action after long intervals of repose,) we have no evidence of the repetition of a single phenomenon; much less have we evidence of geological cycles, in which the same events are repeated, again and again, in a stated order, and at stated intervals. Thus, whole orders of fishes, characteristic of the older strata, become extinct, and are succeeded by new races, which in their turn give place to others; and this class of vertebrated animals affords an unbroken record, from the earliest to the most recent geological epoch; the changes which occur in it being more rapid than those which take place among invertebrated animals; but as we ascend in the series of strata, we meet with no instance of the revival of any of the extinct genera or species.

"If we apply ourselves to the task of classifying organized bodies now existing, arranging them in groups, as they differ from or resemble each other in their structure, we find that those forms of each group which are most dissimilar, are connected by a series of gradations, separated from each other by the most minute distinctions, and that the groups, whether we regard the larger or the subordinate divisions, are again connected by forms possessing some of the characteristics of two groups."

A very close analogy is thus found to exist between extinct and recent species, so as to leave no doubt on the mind, that the same harmony of parts and beauty of contrivance which we admire in the living creature has also characterized the organic world at remote periods.

For all are equally
A link of Nature's chain
Formed by the Hand that formed me,
Which formeth nought in vain.

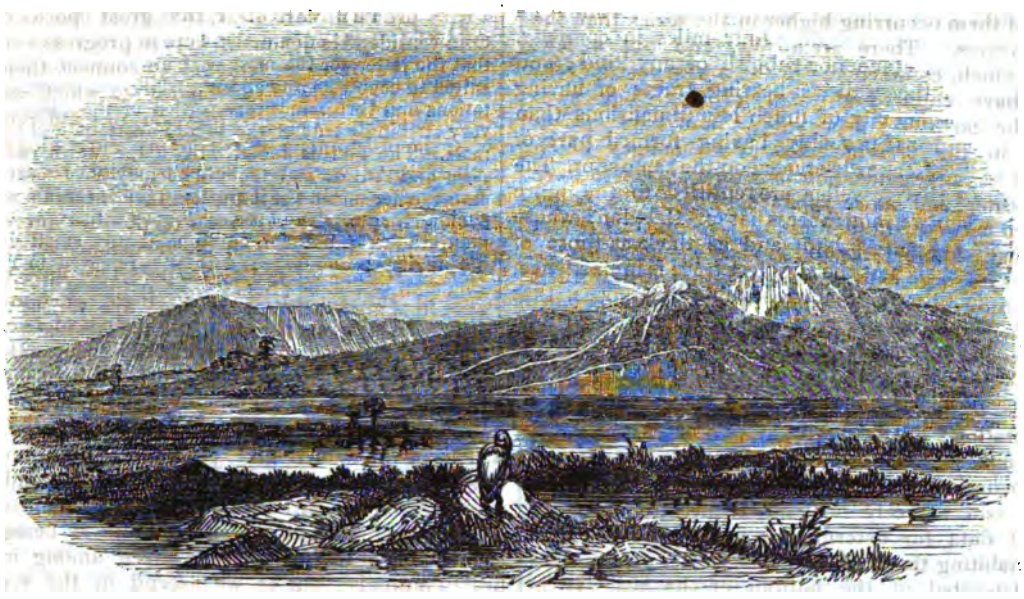
"The geologist, therefore, can bring new and original arguments to bear upon those parts of natural theology which impress us with exalted conceptions of the intelligence, power, wisdom, and unity, of design, manifested in the creation.

"That the most perfect unity of plan can be traced in the fossil world, through all the modifications it has undergone, is admitted by all geologists, and also that we can distinctly carry back our researches to times antecedent to the existence of the human species. It can be proved that man had a beginning, and that all the species now contemporary with man, and many others which preceded these races, had also a beginning. And thus, as we increase our knowledge of the inexhaustible variety displayed in living nature, and admire the wisdom and power which it displays, geology will incalculably increase our admiration of the works of creation, by suggesting the reflection that the present order of things is only the last of a great series, of which we cannot estimate the number or the limit in the past ages of the world*."

* LYELL'S *Anniversary Address*, 1837

[Abridged from ZORNLIN'S *Recreations in Geology*.]

THE moral of that poetical fiction, that the uppermost link of all the series of subordinate causes is fastened to Jupiter's chair, signifies that Almighty God governs and directs subordinate causes and effects.—HALE.



THE SUPPOSED SITE OF NINEVEH.

NINEVEH.

THE Lord will stretch out his hand against the north, and destroy Assyria; and will make Nineveh a desolation, and dry like a wilderness. And flocks shall lie down in the midst of her, and all the beasts of the nations: both the cormorant and the bittern shall lodge in the upper lintels of it; their voice shall sing in the windows; desolation shall be in the thresholds: for he shall uncover the cedar work. This is the rejoicing city that dwelt carelessly, that said in her heart, I am, and there is none beside me: how is she become a desolation, a place for beasts to lie down in! every one that passeth by her shall hiss, and wag his hand.—ZEPHANIAH, ch. ii. v. 13, 14, 15.

THUS did the prophet foretell the future desolation of NINEVEH, when that mighty city was standing in all the pride of power and greatness, and when its people, delighting themselves in the luxuries and pleasures around them, paid little attention to the tidings of approaching ruin. The first mention of this city is in the tenth chapter of Genesis, where it is said—"Out of that land (Shinar) went forth Asshur, and builded Nineveh;" but, from its name, it has been supposed that it was greatly enlarged, and improved by Nimrod or Ninus. Nineveh stood on the banks of the Tigris or Hiddekel river, and was in extent, though not in the amount of its population, almost equal to Babylon. From the description given by the prophet Jonah we find it to have been an exceeding great city of three days' journey, (which must be understood probably of its *circuit*,) and also that it contained "more than six-score thousand persons that could not discern between their right hand and their left," and allowing these *young children* to have been a fifth part of the inhabitants, (Jonah, ch. iv. v. 11,) the whole population must have amounted to 600,000, or about half the present population of London. We are told by the old historian, Diodorus Siculus, that this city was fifteen miles long, nine broad, and forty-eight in circumference. It was surrounded by large walls 100 feet high, upon the top of which three chariots could pass together abreast, and was defended by 1500 towers, each 200 feet high. The city was first taken by the Medes and Babylonians in the reign of Sardanapalus, 747 years B.C., after having been for 1450 years mistress of the East, and holding in subjection even Babylon itself. Nineveh, however, was still of great importance, and afterwards resumed its rank as a capital city and the seat of government, until Nabopolassar, a general in the Assyrian army, seized on Babylon and made himself king.

Nineveh now began rapidly to decline, and to yield to the power of her great rival: in the year 633 B.C., the Medes laid siege to the city under the conduct of Cyaxares, their king, but were diverted from their purpose by an invasion of Media at that time by the Scythian host: Cyaxares withdrew his army from Nineveh in order to repel these invaders, and it was not till the year 612 B.C., that having formed an alliance with the king of Babylon he returned to the siege, accompanied by that monarch, and utterly destroyed the city. On this occasion there was a remarkable fulfilment of the prophecy delivered by Nahum, where speaking of Nineveh he says, "The gates of the rivers shall be opened, and the palace shall be dissolved,"—(chap. ii. v. 6:) for the Medes and Babylonians were enabled to gain entrance to the city, by means of a flood of the Tigris, which carried away a part of the wall, two miles in extent, and facilitated their assault. The carelessness and drunkenness of the inhabitants, likewise, gave the enemy every advantage, and became the fulfilment of another part of Nahum's prophecy: "For while they be folden together as thorns, and while they are drunken as drunkards, they shall be devoured as stubble fully dry,"—(Nahum, ch. i. v. 10.) Two hundred years before this event, the prophet Jonah had been sent to announce the fall of their city; but the repentance and humiliation of both monarch and people averted for a time the threatened calamity. When, however, the danger was removed, the repentance was also forgotten, and the people relapsed into their old sins, notwithstanding the faithful warnings of the prophets, Nahum and Jeremiah; and thus brought on themselves the final destruction of their city, which never appears to have revived or recovered from the assaults of the Medes and Babylonians, but to have sank in rapid decay. It is never after mentioned in Scripture, as a city then in existence; nor does any profane author speak of it except as in a ruined state.

The site of Nineveh is now uncertain; but on the eastern bank of the Tigris, and at about three quarters of a mile from that stream, the village of Nunia, and a sepulchre which is shown as that of the prophet Jonah, seem to point out the position of that celebrated city. The ruins in the vicinity of this village were examined by Mr. Kinneir in 1810, and he found them

to consist of a rampart and a fosse, forming an oblong square, not exceeding four miles in compass. He saw neither stone nor rubbish of any kind; and he speaks of the wall as bearing traces of having belonged to some city of much less dimensions than Nineveh, and as probably having formed part of Ninus, a city afterwards erected on the same spot. The opinions of this traveller are entitled to the more respect, when we remember, that of Babylon, whose walls were at least as high and as thick as those of ancient Nineveh, not the slightest trace is in existence, and it seems therefore unreasonable to suppose, that the ruins of the elder city should be still visible. Mr. Rich, however, who visited the spot in 1820, is inclined to the opinion that these ruins formed part of the ancient city: he supposes the space enclosed by the walls, to have contained the citadel and royal palace; he describes the situation of several artificial mounds both within and without the walls, whose antiquity is well ascertained by the remains which are found by digging deeply into them; such as cylinders, fragments of sculptured stone, bricks, and pieces of gypsum with inscriptions. Among other curiosities, an immense block of stone has been dug from one of these mounds, on which are sculptured the figures of men and animals.

The differing opinions of travellers with respect to the antiquity of the ruins still remaining in this place, and the great uncertainty which must always exist on the subject, are in themselves sufficient to testify to the fulfilment of prophecy. The desolation of Nineveh is complete: "an utter end is made of the place*," and its true site may for ever be sought for in vain.

* Nahum, ch. i. v. 8.

How sweet a thing is *Death*, to all who know
That all on earth is vanity and woe;
Who, taught by sickness, long have ceased to dread
The stroke that bears them to this peaceful bed!
Few are our days, yet while those days remain,
Our joy must yield to grief, our ease to pain;
Then tell me, weary pilgrim! which is best,—
The toilsome journey—or the traveller's rest?—?

THE Japanese are extremely singular in some of their religious opinions. They never supplicate the gods in distress; holding that, as the gods enjoy uninterrupted bliss, such supplications would be offensive to them. Their holydays, accordingly, are dedicated to feasts, weddings, and all public and private rejoicings. It is delightful to the gods, say they, to see men happy. They are far from being singular in thinking that a benevolent Deity is pleased to see men happy; but nothing can be more inconsistent with the common feelings of men, than to hold, that in distress, it is wrong to supplicate the Author of our being for relief, and that He will be displeased with such supplication. In deep affliction, there is certainly no balm equal to that of pouring out the heart to a benevolent Deity, and expressing entire resignation to His will.——LORD KAMES.

HAPPINESS, though necessarily involving present pleasure, is the direct or indirect, and often the very distant, result of feelings of every kind, pleasurable, painful, and indifferent. It is like the beautiful profusion of flowers which adorn our summer fields: in our admiration of the foliage, and the blossoms, and the pure air and sunshine, in which they seem to live, we almost forget the darkness of the soil in which their roots are spread. Yet how much should we err, if we were to consider them as deriving their chief nutriment from the beams that shine around them, in the warmth and light of which we have wandered with joy. That delightful radiance alone would have been of little efficacy, without the showers, from which, in those very wanderings, we have often sought shelter; or, at least, without the dews, which were unheeded by us, as they fell silently and almost insensibly on our evening walk.——BROWN.

THE VARIED POWERS OF MAN.

ONE considerable distinction between men and animals is that the latter, for the most part, are limited to the regions suited to each separate species, while men place their habitations and thrive in every portion of the globe. This is very strikingly true of the more important and larger animals. The lion is found only in the warm countries of Asia and Africa, and though he may have formerly been seen further north, yet it appears that he could not thrive in such a climate. The species of apes which are most like man are few in number, and inhabit only small districts of hot regions; and when carefully removed to France or England, cannot be preserved against those diseases which arise from great sensibility to cold. The various tribes are confined within very narrow limits; the orang-otang is found only in the island of Borneo, and the chimpanzee on the west of Africa. The same is true of the camel, which thrives only in hot sandy countries; and of the elephant, the Asiatic species of which may be certainly distinguished from the African. The American animals differ from those of the old world, and those of New Holland from all others. Man, on the contrary, lives in the arctic, and multiplies in the torrid zone. His hardy frame remains uninjured amid the cold of a Siberian or of a North American winter, where the mercury freezes in the thermometer. It is even stated, that on the shores of Hudson's Bay, brandy froze in the rooms of some Englishmen, in which they kept fires. Yet the Esquimaux and Canadians go about hunting in this temperature, and three Russians lived six years on Spitzbergen, eleven degrees nearer to the pole than the arctic circle. On the other hand; the most populous parts of Asia are the hottest, and the islands immediately under the equator are fully peopled. America is inhabited through all degrees of latitude from Terra del Fuego to the Northern Ocean. The sultry interior of Africa swarms with a negro population. In Senegal, in Sierra Leone, in the deserts of South America, in South Carolina, the thermometer at its highest point ranges from 100° to 115°. And not only does man thus exist everywhere, but he exists in hundreds of millions. The same capability for occupying all situations is observable in his being placed on plains, in mountains, in the lowest situations, and on positions so high that the pressure of the atmosphere is reduced to two-thirds what it is on the medium surface of the earth.

It is evident that, to a creature distributed so extensively over the face of the earth, every kind of food must be acceptable, as it would be impossible for him to find the same descriptions of produce in situations so dissimilar. In those extreme latitudes where the cold locks up the ground to all vegetation during the far greater portion of the year, the inhabitants find it both necessary and wholesome to live on a diet of flesh. The habits of some of these people show that even what would disgust ourselves is not in itself injurious. The natives of Greenland, when they catch a seal, bury it till wanted, and then devour the half-putrid, half-frozen flesh as a dainty. The Samoiedes take their meat raw, and drink the fresh blood of the rein-deer. On the contrary, the greater part of the people of the torrid zone find it more conducive to health to draw their subsistence from the vegetable productions so abundantly scattered around them. Rice, millet, maize, the roots of the potato, the yam, the cavassa, nuts of several kinds, spices and cooling fruits, are the precious gifts of nature to them. The diet of animals is always suited to the conformation of the stomach; and it would be impossible for a carnivorous animal to subsist on vegetable food, or for a graminivorous one to live on flesh—as indeed it would appear ridiculous to offer hay to a lion, or meat to a cow.

LIKE some vast flood, unbounded, fierce, and strong,
His nature leads ungoverned man along;
Like mighty bulwarks made to stem that tide,
The laws are formed and placed on every side:
Whene'er it breaks the bounds by these decreed,
New statutes rise, and stronger laws succeed;
More and more gentle grows the dying stream,
More and more strong the rising bulwarks seem;
Till, like a miner working sure and slow,
Luxury creeps on, and ruins all below;
The basis sinks, the ample piles decay,
The stately fabric shakes and falls away;
Primeval want and ignorance come on,
But freedom, that exalts the savage state, is gone.

CRABBE.

ON NEW YEAR'S GIFTS.

It is always pleasant to contemplate those little acts of kindness, which occasionally show that mankind are brothers, born of the same great Father, and formed to assist each other during their sojourn on earth. One of these manifestations of feeling, though trifling in itself, is not contemptible, when considered as a symbol of good wishes: we allude to the presentation of New Year's Gifts.

The origin of this custom seems to have been, that the giving of some trifle on the commencement of the year shall be deemed as a mode of expressing good wishes for the receiver during the year. It is even probable that superstition had its share in the growth of the custom, for we find that it was prevalent among the Romans. Whether it can be traced still farther back we do not know, but there are many records of its existence among that enterprising but superstitious people. The usual presents made were figs and dates, covered with leaf-gold, and sent by clients to patrons, accompanied with a piece of money, which was spent in purchasing the statues of deities. An *amphora*, or ancient Roman jar, has been described by Fosbrooke, on which was an inscription, denoting that it was a New Year's Gift from the potters to their patroness. Caylus has described a piece of pottery with an inscription, wishing "A happy new year to you;" another, where a person wishes it to himself and his son; and three medallions with the laurel-leaf, fig, and date, and an inscription wishing a happy new year to the Emperor. New Year's Gifts were continued under the Roman Emperors till the time of Claudius; but when the Christian religion spread through the different countries of Europe, certain pagan ceremonies which often accompanied the presentation of the Gifts were dispensed with.

But although ceremonies inconsistent with Christianity were banished from the custom, the Gifts themselves, as tokens of good will, still continued; and there are abundant proofs of the prevalence of the custom in past ages as well as the present. In a poem nearly three centuries old, are the following lines:—

The next to this is New Yeare's Day, whereon to every frende,
They costly presents in do bring, and Newe Yeare's Gifts do sende.
These Giftes the husband gives his wife, and father eke the childe,
And maister on his men bestowes the like, with favour milde,
And good beginning of the yeare they wishe and wishe againe,
According to the auncient guise of heathen people vaine.
These eight days doth no man require his dettes of any man,
Their tables do they furnish out with all the meate they can;
With marchpaynes, tartes and custards great, they drink with staring eyes,
They rowte and revell, feede and feaste, as merry all as pyes:
As if they should at th' entrance of this New Yeare hap to dye,
Yet would they have their bellies full, and auncient friends allie.

Monarchs seem to have been in the habit of *expecting* New Year's Gifts. Henry the Third is said to have *extorted* them (a curious mode of obtaining a gift). It has been supposed by Dr. Drake, that the immense wardrobe known to have been possessed by Queen Elizabeth, was in great part formed from New Year's Gifts presented to her by her nobility. It appears, from Mr. Nichols's *Progresses*, that the greatest part, if not all the peers and peeresses of the realm, all the bishops, the chief officers of state, and several of the queen's household servants, even down to her apothecaries, master-cook, serjeant of the pantry, &c., gave New Year's Gifts to her Majesty, consisting, in general, either of a sum of money, or jewels, trinkets, wearing apparel, &c. The largest sum given by any temporal lord was twenty pounds; but the Archbishop of Canterbury gave forty pounds, the Archbishop of York thirty pounds, and the other spiritual lords twenty or ten pounds each. Many of the temporal lords and great officers, and most of the peeresses, gave rich gowns, petticoats, silk stockings, garters, doublets, embroidered mantles, looking-glasses, fans, bracelets, jewel-caskets, &c. Among individual gifts which have been recorded, are the following curious collection: Sir Gilbert Dethick, Garter king at arms, gave a book of the States in William the Conqueror's time; Absalon, master of the Savoy, gave a Bible covered with cloth of gold, garnished with silver gilt, and plates of the royal arms; the Queen's physician presented her with a box of foreign sweetmeats; another physician presented her with a box of green ginger, and a pot of orange flowers; her apothecaries gave her a box of lozenges, a box of ginger candy, a box of green ginger, and pots of other conserves; Mrs. Blanch Parry gave her Majesty a little gold comfit-box and spoon; Mrs. Morgan gave a box of cherries, and one of apricots; the queen's master-cook, and her serjeant of the pantry, presented her with various confectionary and preserves; Putrino, an Italian, gave her two pictures; Ambrose Lupo gave her a box of lute-strings, and a glass of sweet water; a cutler gave her a meat knife, having a handle which opened like a fan; Jeremy Bassano gave two drinking-glasses; and Smythe, *the dustman*, presented her Majesty with two bolts of cambric. It is said that Elizabeth's presents in return, were always of far *less* value than those she received.

While speaking of New Year's Gifts to royalty, we may mention that a journalist about fifteen years ago, stated that presents are always given by the different members of the royal family of France, to each other, on New Year's Day. It was stated: "For the six months preceding January, 1824, the female branches of the royal family were busily occupied in preparing presents of their own manufacture, which would fill at least two common-sized wagons. The Duchess de Berri painted an entire room of japanned panels, to be set up in the palace; and the Duchess of Orleans prepared an elegant screen. An English gentleman who was admitted suddenly into the presence of the Duchess de Berri two months before, found her, and three of her maids of honour, lying on the carpet, painting the legs of a set of chairs, which were intended for the king."

To descend from royalty to the humbler classes of society, we find the custom showing itself in various ways. Bourne says,—"If I send a New Year's Gift to my friend, it shall be a token of my friendship; if to my benefactor, a token of my gratitude; if to the poor, which at this season must never be forgot, it shall be to make their hearts sing with joy, and give praise and adoration to the Giver." This truly amiable sentiment may represent the motives of kindness which induce this custom. The *form* in which a present is given is a trifle: the kindly feeling which it is meant to convey is the real kernel; the other is but the shell. Sometimes an orange stuck with cloves used to form the gift; at other times gloves; metal pins (when wooden skewers were commonly used in lieu of them,) were an acceptable present to females. The presentation of almost any trifle was, and even now is, considered a memento of good feeling at this season. In an old poem, cited in Poole's English Parnassus, are these lines:—

The King of Light, father of aged Time,
Hath brought about that day that is the prime
To the slow-gliding months, when every eye
Wears symptoms of a sober jollity;
And every hand is ready to present
Some service in a real compliment.

Whilst some in golden letters write their love,
Some speak affection by a ring or glove,
Or pins and points, (for e'en the peasant may,
After his ruder fashion, be as gay
As the brisk courtly Sir,) and thinks that he
Cannot, without gross absurdity,
Be this day frugal, and not spare his friend
Some gift, to show his love finds not an end
With the deceased year.

A copy of verses was often used as a New Year's Gift. Buchanan presented a copy of verses to the unfortunate Mary, Queen of Scots, on New Year's Day. An old manuscript in the British Museum, states, that the boys of Eton school used on this day to play for New Year's Gifts, before and after supper; and also to make verses, which they presented to the provost and masters, and to each other.

In some districts of Scotland it was formerly the custom for servant-maids to present a New Year's Gift to their masters. It was also customary there, as well as in the North of England, for a house to be entered very early on the morning of New Year's Day, by some young men and maidens, selected for the purpose, who presented a spiced bowl, and expressed good wishes to the inhabitants. It was likewise a custom to *send* New Year s Gifts on New Year's Eve; and on New Year's Day, to wish each other a happy New Year, and *ask* for a New Year's Gift.

In France the presentation of trinkets on New Year's Day is carried to a very great extent. The prevailing present is a little case, made of sweetmeats, in which is contained some little trinket or other. The making of these sweetmeat-cases is carried on to an enormous extent at Paris, just before the New Year. There is one street, the *Rue des Lombards*, where the wholesale confectioners reside, which is said at this period to be almost blocked up with wagons and carts, laden with cases of sweetmeats for the provinces. These little sweetmeats assume almost every imaginable form, such as bunches of carrots, green peas, boots and shoes, lobsters and crabs, hats, books, musical instruments, gridirons, frying-pans, saucepans, &c.,—all made of sugar, and coloured to imitate the real object, and all being made hollow within, to contain some trinket, or *bon-bon*. Pastry-cooks may also be seen traversing the streets, carrying boards, on which are miniature temples, churches, pagodas, theatres, &c., all made of flour and sugar, and tastefully embellished. The value of the sweetmeats alone presented or bought in Paris on this day is said to amount to half a million francs. The value of the jewellery presented is very large. Friends visit each other on the morning of the day, and interchange presents. No person pays a visit empty-handed: each one gives according to his or her means, and everything is accepted when offered. The ladies come in for a large share of these presents, in the form of dresses, jewellery, gloves, artificial flowers, &c.

One feature which has distinguished New Year's Gifts among the higher classes in England, within the last few years, is the presentation of the splendid *Annuals*, published for that express purpose. The number of copies of these rather costly volumes sold is very large; and they are distinguished by elegance and lightness, rather than by sterling literary merit. It was also an old custom for the Poet Laureate to compose an ode on the new year, which every New Year's Day was presented to the reigning sovereign; but this practice is now discontinued, probably on account of the bad taste usually connected with hired encomiums, and from the feeling that the spontaneous prayers and good wishes of a great nation for the welfare of the sovereign are far more acceptable than the inflated applause of the Laureate odes

THE PROGRESS OF IMPROVEMENT.

IMPROVEMENT in every possible direction of our external conditions appears to be the ruling tendency of these latter days. The proximate, the mediate, and the remote—each exhibits the superior and prevailing influences of this beneficial and ever-busy impulse. Turn our eyes wheresoever we may, we meet everywhere some proof of its agency, or some result of its action, in the trivial as well as important matters of our temporary existence. Every newspaper teems with some desideratum, enlarging our wants by the admirable ingenuity of the supply. To consider even some of the immediate objects of its energy,—Morison's pills, the universal internal panacea,—Macintosh's capes, the universal external preservative,—our unrivalled hair-dyes,—our surpassing-excellent patent spring wigs,—the thousands of infallible cures, mocking Death himself in all his favourite points of assault,—our very doors swung upon patent spherical hinges, moving more after the manner of ghosts in old romances, than the real creaking doors of other days,—and the graver and greater boast of this the nineteenth century, steam itself: power in the very abstract and essence, susceptible of infinite uses and application, small and magnificent. What more need we enumerate, from the patent damp-expelling respirator, to the puddle-resisting Indian-rubber clog? Rise and reverence, ye ancient men of less favoured times, and more barbarous paraphernalia.

So far this is satisfying; nay more, a matter of no little exultation and delight. But amidst this hubbub of luxuries, convenience, and accommodation, the still small voice within us pushes forward an inquiry of far more interest and concern. How have things gone on in the internal sphere of man's nature—the world of character? Is the same busy progress traceable here also? Has vice, in any one of her hideous aspects, disappeared from amongst us? Has virtue improved in quality, or increased in degree? Are kind hearts and noble deeds more plentiful, and their opposites less common? Are men better neighbours, better citizens, and, all in all, better Christians than formerly? This is the anxious investigation of a reflection which teaches us, that however splendid in discoveries, and however far progressing the temporary conditions of our kind may be, they are little to boast of, without a corresponding advance of our moral value, and consequently of our relative dignity. In vain we boast of inventions and improvements, which, however valuable and remarkable they may be, leave us all on the extreme of this world; for naked we came into this world, and naked we go out of it. For our soul alone we take with us, and, so to say, at a moment's call. Then say, Sense, and answer, Philosophy, how does it behove us to cultivate and improve, to ornament with all goodly virtues and qualities, to frame and form in the furnace of trial in this world, the sole thing we carry out of it, to meet the graces of a better.

Let us not therefore boast too much of our present state of cultivation and advancement, nor estimate at too great an importance the spirit of a partial and temporary improvement in our external and contingent condition, as mortal men, while in the higher and eternal matters of our mind and character, its impulses are faint, or altogether wanting.

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ST. OMER'S, IN FRANCE. I.

RUINS OF THE ABBEY OF ST. BERTIN, AT ST. OMER.

ST. OMER is a town of much importance in the department of the *Pas-de-Calais*, in France. This department comprises a tract of country which was formerly included in the province of Artois. The reader is probably aware, that during the first French revolution, the mode of dividing the country, for political and legal purposes, was changed: France was, before that time, divided into a moderate number of provinces, or military governments, each of which gave a title to some prince or nobleman. But the modern mode of division is into departments, which are much smaller than the ancient provinces, and of which there are altogether about eighty. Pas-de-Calais (derived from the French name for the Straits of Dover, which are adjoining to the coast) is, then, the district formerly known as Artois.

Pas-de-Calais lies on the north-east coast of France, and is bounded by French Flanders on the north-east, and by the department of Somme on the south, and is divided by a chain of hills into two regions, the southern and the northern. The former slopes gently towards the banks of the river Authie, and is traversed by numerous small valleys; the latter perceptibly inclines towards the north. The face of the country much resembles that of Belgium, and has a climate rather humid and variable, which is the cause of frequent intermitting fevers. The soil is, generally speaking, productive, and a considerable amount of sandy beach has been gained from the sea, and brought into cultivation. The produce is generally corn, hemp, flax, tobacco, coleseed, rapeseed, &c. There is not much wood, but the deficiency is compensated by an abundance of turf and coal. The fisheries along the coast are considerable, but the

chief part of the revenue of the department is drawn from its manufactures of woollen, cotton, linen, lace, leather, pottery, and oil. Numerous small streams flow through the department, such as the Aa, the Lys, the Scarfe, the Canche, and the Authie. There are also several canals, such as that of Ardres, that of Marq, that from Calais to St. Omer, and that from Calais to Guisnes. The whole department contains a superficial area of about 338 square leagues, and a population of about six hundred and fifty thousand.

Such is the general nature of the department in which St. Omer is situated. The other principal places in it besides the last mentioned town are Calais, Boulogne Arras, Bethune, Montreuil, Guisnes, and Ardres. It was between the two last-named towns that the celebrated interview took place between Henry the Eighth and Francis the First, and which has attained the appellation of *Le Champ du Drap d'Or* (The Field of the Cloth of Gold). The only town of the department to which we shall on the present occasion direct our notice, is St. Omer.

St. Omer formerly gave its name to a noble family which distinguished itself during the time of the Crusades. Galfred, Castellan of St. Omer, one of the companions of Godfrey of Bouillon, was one of the first commanders of the Knights Templars; and for some centuries after that period, his descendants distinguished themselves greatly in the events of the times. The town from which they derived their title was, in 626, only a small hamlet. This hamlet had been gradually built in the vicinity of the castle belonging to the family to whom we allude: this castle was built on Mount Sithon, and the name of Sithon was borne by St. Omer, for a long period. The Castellan Adroald gave the hamlet to St. Omer, bishop of Therouenne, in 645. This possessor afterwards built the cathedral and the monastery of the Bernardines: this monastery was, a few years afterwards, under the rule of St. Bertin, from whom it obtains its name. During the eighth and ninth centuries, the town was by degrees surrounded with walls, and it began to assume the appearance of a fortified place: it also now lost its name of Sithon, and acquired that of St. Omer. A portion of the town was destroyed by fire in the twelfth century. The town was in possession of the Earls of Flanders for many generations; but about the year 1500 there commenced a series of contests in France and the Low Countries which frequently affected St. Omer:—first the French king besieged it;—then the Burgundians gained possession of it;—from them it was taken by the King of France; and from him again, it passed into the hands of the Archduke Maximilian. Again it was attacked by the French on two different occasions in the seventeenth century, and lastly, at the peace of Nimeguen, in 1678, it was finally ceded to the crown of France, to which it has ever since belonged.

According to a French writer of the end of last century, the following was the general nature of the town of St. Omer at that period. It contained six parishes; four convents for men, Capuchins, Recollects, Carmelites, and Dominicans; six monasteries, or religious houses for females; a seminary; and two colleges. There were two hospitals for women, a general hospital, two orphan asylums, one for each sex, and another asylum always occupied by twelve poor and aged men, in memory of the twelve apostles. The chapter of the cathedral was composed of a dean, two archdeacons, a penitentiare, two other dignitaries, thirty canons, and twenty-four chaplains. The same writer states, that "Pope Paul IV. erected St. Omer into a bishopric in 1553. In the later times of the monarchy (meaning before the French revolution) the bishop, a suffragan of Cambray, received fifty thousand livres of rent. But this is little in comparison with the produce of the Abbey of St. Bertin, of which the revenues reach the extent of one hundred and fifty thousand livres. It was composed of fifty religious inmates, who had the choosing of their abbot. The Faubourg of Saint-Pont is beautiful; the number of its houses is very considerable, many of which are inhabited by families originally from Flanders. These families have retained among them their ancient idiom, which is not very different from that spoken in Flanders. They preserve the ancient simplicity of their nation, and in order the better to effect this, they intermarried only among themselves, for which purpose the Pope allowed them certain dispensations on the subject of consanguinity. The priests belonging to them were also allied to them by blood."

So much for St. Omer forty years ago: we must now describe it in its more recent state.

The entrance to St. Omer, by way of Calais, is through an avenue of trees. The trees themselves have a cheerful aspect, as such natural objects always have: but the objects seen in the vista beyond them have a heavy and gloomy effect, consisting of embattled walls, lines of fortification, a gate of enormous strength, a moat with a long bridge over it, barriers, portcullises, &c., all of which indicate that St. Omer must be ranked among the fortified towns with which Flanders was so plentifully supplied in past ages. The passport system is rigorously enforced.

In another article we will briefly describe the principal objects of attraction in St. Omer at the present day.

ON MILITARY DRILLING. I.

IT has been said, with much truth, that the best mode by which a nation can enjoy peace, is to be constantly prepared for war. It is melancholy to reflect upon the misery and vice which war has occasioned in all ages; but still, so long as ambition, avarice, and tyranny continue to influence mankind, war, or at least a state of active preparation for war, will be necessary to insure the independence of the nation, and the liberty of the subject.

Such then being the case, it follows that that nation which most diligently cultivates war as an art, and brings the refinements of science to bear upon its theory and practice, is more likely to be respected, and to remain unmolested, than another nation which ceases to cultivate the military art, and offers no encouragement to its professors.

Considering, therefore, that man is constituted a frail and erring being, whose greatest enemy is himself, we assume that war, or at least a state of active preparation for it, is necessary to the preservation of peace. It becomes then of first-rate importance to consider the best means for practising the military art; and we propose to call the attention of the reader to one department of it, which consists in training numbers of men to act in concert on foot, so as to form a vast moving machine, under the direction and command of skilful leaders.

It is almost needless to expatiate on the wonderful superiority of disciplined troops, though few in number, over savage hordes, which have great animal strength, without the skill to combine and direct it. Hence it has always been found that the most civilized nations have been the most successful in war, because their soldiers are made to understand so perfectly, and to pay so strict an obedience to the example and words of their commanders, that all their movements

are performed in unison; and the army thus resembles one vast animal, the motions of whose various members are subservient to one object, and are governed and directed by one mind. On the contrary, in an army (if such it can be called) of undisciplined savages, each man is the creature of his own impulses; he follows his own ideas, and adopts that course which seems to him most likely to reward him with success. Thus the whole number of fighting men can seldom be brought to act in unison; and though they may have one common object, they can seldom be brought to agree in following one common mode of effecting that object. As, therefore, the different parts of such a collected multitude are quite independent of each other, so far from augmenting, they sometimes counteract, or, at least, diminish each other's effective force; and as to which of these results shall ensue is entirely dependent on chance. No wonder, then, that a body, acting so promiscuously, should soon be confused, dispersed, or destroyed by a mere handful of men, who understand instantly, and obey at once, the orders of one or of a few commanders; and thus not only direct all their efforts to the same point, but through the same channel.

Discipline and subordination, therefore, constitute one of the chief characteristics of the army of a civilized nation. Different nations employ different kinds and degrees of discipline, but that of Europeans is the most perfect and effective.

We will illustrate the sentiments here expressed by giving, in part, the method used in the English army for DRILLING; that is, changing the clumsy rustic into the finished and disciplined soldier, by giving to the body that position and gait, which, when habitually persevered in, is most conducive to health, strength, and all the other qualities of a good and ready soldier, as well as making him understand the peculiar and concise language used in the words of command; so that he may be always ready to obey *instantly* and *correctly* any order that can possibly be given.

In the apprenticeship of men to soldiership, each recruit is first drilled singly, or in *squads*, or small companies of three or four. This is to improve the personal appearance, gestures, and carriage of each individual recruit with reference to himself, so that, when combined in larger numbers, they may all act in unison: then they are taught those other motions and manœuvres, which necessarily require a considerable number of men together for their proper performance. If any of the recruits have not, however, been thoroughly *broken in*, as it were, during the first process, this will soon be discovered when they are associated in large numbers; for the incorrect movement of a single man may sometimes throw a whole line into disorder. Such is the importance of habitually maintaining that steadiness and correctness of behaviour which has once been acquired by drilling, that even the best soldier, after returning from a long absence, must be re-drilled, like a recruit, before he can safely rejoin his company.

When standing in line without arms, and ready to receive the word of command, the position required is as follows:—The heels must touch each other; but the toes must be separated, so that the two feet may form an angle of about 60°. Both knees must be straight, but not stiff; so that the weight of the body may rest equally on both the feet. The body must not incline to one side more than to the other; but yet it must not be strictly upright, but leaning a little forwards, so that its weight may be thrown on the balls of the feet. This is evidently the firmest position for resisting blows, &c. *in front*; because if there be any tendency to fall it is *forwards*, and not *backwards*; which would be the case, if the principal weight rested on the heels. The axis of the body must therefore be *straight*, though not perfectly *upright*. The belly must be rather drawn in, but the breast advanced. The shoulders must be kept back equally, and of equal height, and perfectly square. The arms must hang straight but loosely; and the palms of the hands must touch the thighs. The thumb, which is the foremost part of the hand, must be as far back as the seam of the trowsers. The head must be erect; the eyes directed straight forward towards a point of equal height with themselves; and such is the rigour of military discipline, that no part of the body, not even the eyes, is allowed to move unless in obedience to the word of command. Every command must be instantly obeyed, as soon as the *last syllable* of command is uttered; for all the former syllables are to be considered only in the light of cautions; and as soon as the required movement has been made, the whole body must remain as steady and immoveable in its new position, as it was before. Whenever the word of command "*as you were*" is given, the body returns exactly to the same position, which it had before this last word of command was given.

As it would be very irksome to continue for a long time in the posture just described, without moving, when long standing is expected to be the case, the word "*stand at ease*" is given; on which the right foot is drawn back three or four inches, and the left knee is bent, so as to throw the weight of the body on the right leg only, which is kept straight. At the same time, the hands are brought together and allowed to fall down in front of the body in a clasped state. Care must be taken that this motion of the arm proceeds from the elbow only, and not from the shoulder.

When the rank is to resume the proper attitude of soldiers, the word "*attention*" is given, at which the hands are instantly let fall to the sides, the body springs up, the left leg is straightened, and the heels closed. This is the only order, or word of command, that can ever be given while standing at ease. When standing at ease, the head and eyes are allowed to move; but the rest of the body is to be kept as steady as when standing at *attention*. It is very desirable, therefore, that sometimes, (especially in cold weather,) the soldiers should be allowed to move their limbs and bodies without quitting the rank. In such cases the words "*stand easy*" is given; after which they are at liberty to move their limbs in any direction till again called to *attention*. The left foot, however, must never be lifted or moved from the spot it originally occupied; so that the body is thus confined to a certain space of ground; it cannot move out of the rank; and, when called back to attention, it cannot fail to resume its proper place, which is kept by the *left* foot.

Oh, Charity! our helpless nature's pride,
Thou friend to him, who knows no friend beside,
Is there in morning's breath, or the sweet gale
That steals o'er the tired pilgrim of the vale,
Cheering with fragrance fresh his wearied frame,
Aught like the incense of thy holy flame?
Is aught in all the beauties that adorn
The azure heaven, or purple lights of morn,
Is aught so fair in evening's lingering gleam,
As from thine eye the meek and pensive beam,
That falls like saddest moonlight on the hill,
And distant woods, when the wide world is still?
Thine are the ample views, that unconfined
Stretch to the utmost walks of human kind;
Thine is the spirit, that with widest plan
Brother to brother binds, and man to man.—Bowles.

RICHMOND CASTLE, YORKSHIRE.

A PORTION of the North Riding of Yorkshire is popularly known by the name of *Richmondshire*, from having, in very early times, been the entire and undivided property of the Earls of Richmond.

Before the Norman conquest, this great estate was possessed by one great Saxon lord; but when William of Normandy took possession of the English crown, the Richmond estate shared a similar fate to that of most other large estates in the kingdom: it was created an earldom, and given to one of William's favourites.

It must be presumed (says Mr. Whitaker), that the man on whom the Conqueror would bestow such a principality must stand high in his favour. But the estate of Earl Edwin was a gem which must be won before it could be worn, and a charter of feoffment could only confer upon the grantee a title to fight his way into possession. Nay more, after possession was acquired, there was equal difficulty in maintaining it. The ejected possessor was one of the most popular as well as powerful men in the kingdom. The Normans were regarded with peculiar detestation in the north of England; and Domesday itself affords a melancholy testimony to the horrible devastation by which alone the native inhabitants could be subdued. A title, however, to subdue so fertile and beautiful a district would not be unacceptable to a Norman soldier. He knew how to curb a wild and disorderly population, without the perpetual necessity of contending with them in the field.

The curb here alluded to was in the shape of a strong castle. In a central situation within the earldom, on the confines of the low country and the mountains, the new possessor selected a rock on the bank of the river Swale, which could not be undermined, and on this spot he lavished all the resources of a great prince, and practised all the skill of Norman fortification, in the construction of a fortress which would at once afford a guarantee to fidelity, and render disaffection and treachery hopeless. Such a structure being both ample and impregnable, would afford protection to the faithful vassals of the earl, who might, by any sudden insurrection, be driven to seek protection within its walls, as well as to accommodate a regular garrison, sufficient to scour the country in every direction. A tumultuary assault, or even a regular siege by such assailants, must, as has been observed by the historian of Richmond, have been despised. But such was the felicity with which a site was chosen for the capital and fortress of the province, that if a disturbance should have happened in the low country, within half an hour a body of horse would be upon the plain, and ready to chase the insurgents; or if, as was more probable, the ruder and more hardy natives of the valleys, trusting to the fastnesses of their neighbouring mountains, presumed to rebel, an active and hardy body of infantry would have no time to waste in traversing the plains, while their enemies above were gathering strength and courage from delay.

Such are believed to be the causes which led to the construction of that fine old Norman building, *Richmond Castle*, in Yorkshire, of which our frontispiece represents a view. It is believed that the castle was commenced by the earl to whom William the Conqueror presented the estate, carried on by his successor, and completed by the third earl; so that we may assume the period of 1100 as *about* the time when the castle was constructed.

There is perhaps not another instance, in the whole of English history, of a great estate changing hands so many times in the course of five hundred years, as that of Richmond. The large extent of the Richmond estate made the early sovereigns glad to seize every pretext for taking it to themselves; and when they possessed it, they were often induced, by policy, to present it to such of their adherents as were most serviceable to them. For a considerable period the estate was possessed by the Dukes of Bretagne, in France, who added to that title the one of Earls of Richmond. It was one of these Dukes of Bretagne who built the great tower or keep of the castle. The estate was seized by Richard Cœur de Lion, on a very slender pretext, and retained for some years. His successor, King John, also retained possession of it for some time, but ultimately made it the purchase-price of the services of Peter de Dreux, who became Earl of Richmond. From this family it was transferred to Peter of Savoy, the uncle to the queen of Henry the Third, but not for any considerable period; for the interests of Henry induced him to manage that the estate should pass into the hands of the Duke of Bretagne, whose ancestors had formerly possessed it.

One of the causes which led to this estate being so frequently passed from one possessor to another was, that the Dukes of Bretagne were, under that title, subjects of the King of France, and, under the title of Earls of Richmond, were also subjects of the King of England; so that whenever the two kings were at war, the possessor retained or lost the estate, according as he sided with or against the King of England. Such an event occurred in the reign of Edward the First. During hostilities with France, Edward took the estate from the Duke of Bretagne, and when peace was restored, gave it back to him again. From this family it passed into the hands of the Countess of Pembroke, and then to Count de Montfort, after that to Edward the Third, and then once again to the Bretagne family. Doomed to perpetual changes of proprietors, the estate was given to the queen of Richard the Second, about the year 1380,—to Ralph Basset in 1391, and to the Earl of Westmoreland in the reign of Henry the Fourth. After remaining several years in this family, it passed to the Dukes of Bedford. From them it devolved upon Henry the Sixth. It was then presented, with the title of Earl of Richmond, to the king's half-brother, whose son Henry defeated Richard the Third, at Bosworth field, and then became sovereign of England, under the title of Henry the Seventh. The estate remained in royal hands till 1613, when James the First created Lodowic Stuart Duke of Richmond.

Such were the mutations which this great estate suffered in early times; we must now speak of the castle itself. In this as in many other cases, the baronial castle led to the construction of a town near it: Richmond Castle did not owe its existence to Richmond town, but the town to the castle.

Our early topographer, Leland, speaking of Richmond town and castle in his day (1540), says:—

Richemont towne is waullid, and the castel on the river side of Swale is as the knot of the cumpace of the waulle. In the waul be 3 gates. Frenchegate yn the north parte of the towne, and is the most occupied gate of the towne. Fuikel-streate gate. Bargate. Al 3 be downe. Vestigia yet remaine. In the market-place is a large chapel of the Trinite. The cumpace of the ruinus waulles is not half a mile about. So that the towne waulle cumpaseth litle but the market-place, the howses about hit, and gardens behind them. There is a suburbe withowt Frenchegate. Fuikel-streat suburbe, strayt west from the market-place, and Bargate suburbe. But Frenchegate suburbe is almost as bygge as bothe the other suburbes. In Frenchgate suburbe is the paroch chirche of al the hole towne. A litle beyonde the ende of Frenchegate streate is, or was, of late, a chapel of a woman anchorete. Bargate suburbe cummith downe to the bridge ende of Swale, the wich bridge is sumtime chayned. A this side the bridge is no building. In this suburbe is a chapel of S. James. At the bakke of the Frenchgate is the Grey Freres a little withowt the wawllis. Their howse, medow, orchard, and a litle wood, is waullid yn. Men go from the market place to hit by a posterne

RICHMOND CASTLE, YORKSHIRE.

gate. There is a conducte of water at the Grey Freres els there is none in Richemont. Not far from the freres waul is a chapel of S. Anthony. Al the towne and suburbes be on the farther side of Swale. The Castel is nere hand as much yn cumpace as the circuit of the town walle, but now it is in mere ruine.

If the castle was in ruins three hundred years ago, its present appearance may be guessed at:—it is, in truth, one of the finest Norman ruins in the kingdom. The name *Richmond* is supposed to have been derived from *Rich mount*, in allusion to the spot selected for the castle; and the same reason led to the naming of Richmond in Surrey, which also belonged to the Earls of Richmond about four centuries ago. The town of Richmond in Yorkshire first consisted of the habitations of the immediate dependants of the earl: those who were in the castle attended divine worship in an oratory, while the townsmen erected a church near the castle; and it is supposed that the present Trinity chapel was the original church of Richmond.

In process of time various monastic institutions sprang up in the neighbourhood of the castle, which owed their origin to the officers and dependants of the earls. The cell of St. Martin arose in the very infancy of the castle; and, in the opinion of Mr. Whitaker, displays at this moment some vestiges of architecture more ancient than any remaining about the castle itself.

A drawing of Richmond Castle, such as it probably appeared about the reign of Edward the Third, has been discovered, and has enabled antiquaries to compare its former with its present appearance. In the drawing, besides the great tower, the general circuit of the building appears nearly as at present. Scolland's hall seems to have undergone no change; but the chapel, a small building then standing near the south-west corner, is now dilapidated and almost gone. As an outpost to the great tower, and in the weakest part of the precinct, was a small barbican and outer gateway of two cylindrical towers, now destroyed. The moat on the same side is now filled up. The lowest story of the keep has been groined, as usual in the great Norman keeps, upon a central octagonal pillar Mr. Whitaker remarks, that

Such are the changes of all earthly things, that all this mighty apparatus, intended for the defence of a prince and a province, which has sustained the shock of hostile invasion, and resounded with the mirth of assembled multitudes, now serves only to enclose a green area of about five acres, and to secure a few sheep which quietly graze upon its herbage. The feudatories of the earldom beheld in these impregnable walls, and under these floating banners, security and protection against predatory warfare, from which they had no other defence. The modern inhabitant of Richmond, however, while he beholds them dismantled and untenable as an ordinary dwelling-house, rejoices that no such protection is now wanted, that his lot has fallen upon better days, when rapine and hostile alarm have ceased, and when the settled administration of law neither craves nor allows of aid from feudal power.

Although the town of Richmond stands on very uneven ground, and could not be approached but by a very inconvenient road, until within a few years back, yet it is a pleasant, well-built, and handsome town, maintaining with proper dignity the appearance of a capital over so extensive a district as that which bears its name, and was once in a state of feudal dependence upon it. Richmond has never been made the seat of any particular manufacture, to much extent; and it therefore presents much of the simple and rural appearance which a non-manufacturing town usually exhibits.

We are what we are made by the objects that surround us; to expect that a man who sees other objects, and who leads a life different from mine, should have the same ideas that I have, would be to require contradictions. Why does a Frenchman resemble another Frenchman more than a German, and a German much more than a Chinese? Because these two nations, by their education, and the resemblance of the objects presented to them, have an infinitely greater connexion with each other than with a Chinese.—Helvetius.

No radiant pearl which crested fortune wears,
No gem that sparkling hangs from beauty's ears,
Not the bright stars which night's blue arch adorn,
Nor rising sun that gilds the vernal morn,
Shine with such lustre as the tear that breaks,
For others' woe, down virtue's lovely cheeks.

ON GARDEN HERBS. I.

INTRODUCTION.

Herbs too she knew, and well of each could speak,
That in her garden sipped the silvery dew:
Where no vain flower disclosed a gaudy streak;
But *Herbs* for use, and physic, not a few
Of grey renown, within those borders grew;
The tufted Basil, pun-provoking Thyme,
Fresh Balm, and Marigold of cheerful hue,
The lowly Gill, that never dares to climb;
And more I fain would sing, disdaining here to rhyme.
SHENSTONE'S *Schoolmistress.*

THE subject of the present and some following papers, may appear a very humble one wherewith to entertain the readers of the *Saturday Magazine.* The beauties of the flower-garden or conservatory, the luxuries obtained from the hot-house, or the substantial products of a well-stocked orchard, might have suggested pleasing considerations enough; but a few insignificant herbs,—what can be said of them? they may be attractive to a swarm of bees, that find themselves richly regaled amidst their fragrant blossoms; and we know that a herbary is a convenient and necessary appendage to our kitchen gardens, but beyond this, what interest can there be in garden herbs, and who would take the trouble to bestow attention on them? It is possible that this may be the feeling of a few of our readers, but we are disposed to think that the number of persons is *but* few, who can pass by in disregard the humble, but useful, tribe of vegetables, of which we are about to speak.

In former days, a much greater share of attention was bestowed on herbs, and a much higher degree of virtue ascribed to them, than it is now the custom to pay or ascribe; their effects in the cure of various diseases, in cheering the spirits, and assuaging all sorts of mental as well as bodily anguish, are stated by the old writers, in terms that appear exaggerated and ridiculous. But if the reverence of the old herbalist was superstitious and absurd, the contempt of the modern student for these useful plants is not very wise. The disparagement of what is common, and the over-estimation of all that is rare and difficult to be attained, are weaknesses to which even the most clever and intellectual persons are occasionally liable. Our object, then, in the following papers, will be, to show that Garden Herbs, when considered with reference to their botanical character; their virtues and medicinal qualities, real or reputed; the uses to which they were applied in former times; the employment of them in various ways amongst ourselves; together with the quaint sayings of herbalists, and the historical and poetical associations connected with them; are by no means devoid of interest, or undeserving our attention.

The example of the ancients may likewise teach us to pay some regard to herbs. King Solomon, with all his wisdom, did not consider them beneath his notice; it is declared of him, that "he spake of trees, from the cedar that is upon Lebanon, to the *hyssop that springeth out of the wall.*" The ancient Syrians are said to have had a great predilection for gardening, and for the rearing of pot-herbs. Among the Greeks and Romans, medicinal herb-gardens were highly estimated, and frequently mentioned by their celebrated writers. The Chinese make extensive use of them; and having no schools for the study of physic, they consider it a duty to teach the uses of simples and roots to their families and domestics. The native Americans also have been observed to carry about with them such roots and herbs as they have found to possess beneficial properties.

A considerable degree of superstition appears to have been mixed up with the knowledge of herbs, in all countries where they have been cultivated. The following lines of Virgil will show that a belief in the magical influence of certain plants was prevalent among the Romans:—

These poisonous plants, for magic use designed,
(The noblest and the best of all the baneful kind,)
Old Mæris brought me from the Pontic strand,
And culled the mischief of a bounteous land.
Smeared with these powerful juices, on the plain
He howls, a wolf among the hungry train:
And oft the mighty necromancer boasts
With these, to call from tombs the stalking ghosts,
And from the roots to tear the standing corn,
Which, whirled aloft, to distant fields is borne:
Such is the power of spells.——

In our own country witchcraft and the knowledge of herbs were for a long time associated together, and advantage was taken of this circumstance by Shakspeare, in his description of incantations, where he fails not to introduce "root of hemlock," "slips of yew," &c. In the reign of Henry the Eighth, the cultivation of medicinal herbs began to occupy the attention of surgeons and apothecaries; private herb-gardens were planted, and Gerard, called the "Father of English Herbalists," possessed the principal one.

By referring to the works of that excellent man, George Herbert, whose writings are full of originality and beauty, we find the knowledge of herbs to have been considered indispensably requisite to a country clergyman. Herbert wrote his *Priest to the Temple* about the year 1630, and in the admirable rules which he has laid down for the regulation of the pastor's conduct, he especially enforces the duty of attending his flock in sickness; and being himself, as far as it is safe and desirable, their physician. He recommends the study of anatomy and physic, and keeping a herbal at hand. He says that the reading of such subjects and the knowing of herbs

May be done at such times as they may be a help and a recreation to more divine studies, as also by way of illustration, even as our Saviour made plants and seeds to teach the people; for he was the true householder, who bringeth out of his treasure things new and old; the old things of philosophy, and the new of grace; and maketh the one serve the other. In the knowledge of simples, wherein the manifold wisdom of God is wonderfully to be seen, one thing would be carefully observed; which is, to know what herbs may be used instead of drugs of the same nature, and to make the garden the shop; for home-bred medicines are both more easy for the parson's purse, and more familiar for all men's bodies. So where the apothecary useth rhubarb or bolearmena, the parson useth damask or white roses, plantain, shepherd's-purse, and knot grass, with better success. As for spices, he doth not only prefer home-bred things before them, but condemns them for vanities, and so shuts them out of his family, esteeming that there is no spice comparable, for herbs, to rosemary, thyme, savoury, and mints; and for seeds, to fennel and caraway seeds. Accordingly, for salves, his wife seeks not the city, but prefers her garden and fields before all outlandish gums. And surely hyssop, valerian, mercury, adder's tongue, yerrow, melilot, and St. John's-wort, made into a salve, and elder, camomile, mallows, comphrey, and smallage, made into a poultice, have done great and rare cures."

We do not find any mention of a public herb-garden in England previous to the planting of one at Oxford, called by a writer of that day "*a spacious, illustrious physicke-garden, beautifully walled and gated;*" which took place about the year 1640. Forty-five years later the Chelsea gardens were in a flourishing state, and artificial heat was used in green-houses, which seems, by Evelyn's manner of speaking of it to have been then a new introduction. The notice in his *Diary* is as follows:—

I went to see Mr. Wats, keeper of the Apothecaries' Garden of Simples at Chelsea, where there is a collection of innumerable rarities of that sort, particularly, besides rare

annuals, the tree bearing Jesuits' bark, which has done such wonders in quartan agues. What was very ingenious, was the subterranean heate, conveyed by a stove under the conservatory, all vaulted with brick, so as he has the doores and windowes open in the hardest frost, secluding only the snow.

Both at the gardens of Chelsea and Kew, there are at present very superb collections of plants, and the advance in horticultural knowledge has been exceedingly rapid throughout our country. The simple herbs which find a place alike in splendid botanical gardens, and in the little plat of ground allotted to the humble cottager, and which we intend separately to describe, have many of them received most appropriate and significant names in times past, by which they are still recognised among the lower class of people. The following amusing extract from the *Journal of a Naturalist*, will give a pretty good notion of the old-fashioned plan of naming herbs and plants:—

In ages of simplicity, when every man was the usual dispenser of good or bad, benefit or injury, to his own household or his cattle,—ere the veterinary art was known, or the drugs of other regions introduced,—necessity looked up to the products of its own clime, and the real or fantastical virtues of them were called to the trial, and manifests the reasonableness of bestowing upon plants and herbs such names as might immediately indicate their several uses, or fitness for application; when distinctive characters, had they been given, would have been little attended to; and hence the numbers found favourable to the cure of particular complaints, the ailments of domestic creatures, or deemed injurious to them. Modern science may wrap up the meaning of its epithets in Greek or Latin terms; but in very many cases they are the mere translation of these despised "old vulgar names." What pleasure it must have afforded the poor sufferer in body or in limb—what confidence he must have felt of relief, when he knew that the good neighbour who came to bathe his wounds, or assuage his inward torments, brought with him such things as "all-heal, bruise-wort, gout-weed, fever-few," (fugio,) and twenty other such comfortable mitigators of his afflictions; why their very names would almost charm away the sense of pain! The modern recipe contains no such terms of comfortable assurance: its meanings are all dark to the sufferer; its influence unknown. And then the good herbalists of old professed to have plants which were "all-good;" they could assuage anger by their "loose-strife;" they had "honesty, true-love, and heart's-ease." The cayennes, the soys, the ketchups, and extra-tropical condiments of these days, were not required, when the next thicket would produce "poor man's pepper, sauce-alone, and hedge-mustard;" and the woods and wilds around, when they yielded such delicate viands as "fat-hen, lambs-quarters, way-bread, butter and eggs, with codlins and cream," afforded no despicable bill of fare. No one ever yet thought of accusing our old simplers of avarice, or love of lucre, yet their "thrift" is always to be seen: we have their humble "penny-wort, herb-two-pence, money-wort, silver-weed, and gold." We may smile, perhaps, at the cognomens or commemorations of friendship or worth, recorded by the old simplers,—at the herbs "Bennet, Robert, Christopher, Gerard, or Basil;" but do the names so bestowed by modern science read better, or sound better? it has "Lightfootia, Lapeyrousia, Hedwigia, Schkuhria, Scheuchzeria;" and surely we may admit, in common benevolence, such partialities as "Good King Henry, Sweet William, Sweet Marjory, Sweet Cicely, Lettuce, Mary-gold, and Rose." There are epithets however so very extraordinary that we must consider them as mere perversions, or at least incapable of explanation at this period. The terms of modern science waver daily; names undergo an annual change, fade with the leaf, and give place to others; but the ancient terms, which some may ridicule, have remained for centuries, and will yet remain till nature is swallowed up by art. No; let our ancient herbalists, "a grave and whiskered race," retain the honours due to their labours, which were more needful and important ones at those periods: by them were many casualties and sufferings of man and beast relieved; and by aid of perseverance, better constitutions to act upon, and faith to operate, than we possess, they probably effected cures, which we moderns should fail to accomplish if attempted.

ON WAX FIGURES.

Among the substances which have been employed as materials for forming imitations of animals, flowers, &c., not the least pleasing, in the effects which it produces, is *wax*. There are at the present day, and have been uninterruptedly for many centuries, persons who devote their attention to imitation in wax, such as we have alluded to. We will say a few words respecting the nature of wax, before we describe the mode of casting figures, &c.

Wax is both an animal and vegetable substance; or rather, the purpose to which bees apply it in the formation of their hives, and the supply which we obtain of it through the medium of bees, lead us to regard it almost as an animal substance. But it will be more correct to call it a vegetable product, since it enters into the composition of the pollen of flowers, covers the envelope of the plum, and of other fruits, especially of the berry of the *Myrica cerifera*, and in many instances forms a kind of varnish on the surface of leaves. Wax is an unctuous-feeling substance, partaking of the nature of a fixed oil; it is distinguished from fat and resinous bodies by not readily forming soaps when mixed with alkaline solutions.

As wax possesses both colour and odour in its natural state, means are sought for depriving it of those properties without injuring the peculiar consistence of the wax. This is effected by a process of bleaching in the open air, or sometimes in chlorine gas. To bleach wax, it is gently melted in a caldron, which has a pipe in the bottom through which the melted wax can flow off. From the caldron it passes into a large wooden cylinder, which is kept in constant rotation, and which is also wetted with water: the consequence is that the wax cools in thin layers round the inside of the cylinder, without adhering to it. The thin layers of wax are then taken out, and exposed on frames covered with linen cloth, to the united action of sun, air, and dew. In a few days it will change its colour, and by repeating the same process two or three times, the wax finally becomes entirely white; it is then cast into cakes for use.

This, then, being the substance in question, we find that such a substance was used at a very early period for the preparation of imitative articles. The Greeks employed wax for taking impressions of seals. There was also a separate class of artists called *puppet-makers* by the Greeks, and *sigillarii* by the Romans, who worked principally in wax. The bedrooms of the Greeks were often adorned with wax figures of boys; but the subjects most frequently represented were branches, fruit, flowers, wreaths, and other objects of the vegetable kingdom. It was customary, at the feast in honour of Adonis, to construct gardens, with ornamental flower baskets, &c.; and as this feast occurred too early in the year to admit of real fruit, flowers, &c., being used, artificial ones, made of wax, were used instead. It is said that Heliogabalus set dishes of wax before his guests, in order to tantalize them with representations of all the luxuries in which he revelled.

In more modern times wax figures have been principally employed in illustration of anatomical details. In the palace at Florence are imitations of all parts of the human body, in coloured wax, for the study of anatomy: more than thirty rooms are filled with these wax preparations, as well as with others respecting vegetable substances. It is said the first idea of forming figures of wax was conceived by Nones, of Genoa, an hospital physician, in the seventeenth century. He was about to preserve

a human body by embalming it; but not being able entirely to prevent putrefaction, he conceived the idea of having the body imitated, as correctly as possible, in wax.

The Abbate Zumbo, a Sicilian, who understood nothing of anatomy, but was skilled in working in wax, imitated the head so perfectly, under the direction of Nones, in coloured wax, that many who saw it mistook it for the real head. Zumbo secretly made another copy, which he took to France, and gave himself out to be the inventor of the art. After the departure of Zumbo, Nones had the whole body imitated in wax by a Frenchman named Delacroix.

The next instance of the kind, which we find recorded, occurred in the year 1721, when La Courege exhibited similar figures in Hamburgh; and in 1737 others were publicly sold in London. About the same period very beautiful figures in wax were made by three Italian artists, Ercole Lelli, Giovanni Manzolini, and Anna Manzolini, his wife; many fine specimens by these persons are, or were, preserved at Bologna, Paris, Turin, and St. Petersburgh. At a later period other artists in this peculiar line appeared in Italy, which seems as if it had been destined for the cradle of artists; among these were Calza, Fillippo, Balugani, Ferrini, and Fontana. The latter carried the art to a high degree of excellence in Florence. He received so many orders, that he employed a large company of anatomists, model-cutters, wax-moulders, and painters; he generally confined his models to representations of the internal parts of the human body.

At Wittenberg, Vogt was accustomed to use, in his lectures, wax preparations in imitation of the fine vessels of the body. In France, Pinson and Laumonier have distinguished themselves in this branch of art. In England, most of our readers are acquainted with exhibitions of wax-work, prepared more for the gratification of public curiosity, than for the advancement or illustration of any particular branch of science. Many of these exhibitions, both in former times, and at the present day, have been distinguished for a good deal of cleverness and ingenuity.

We must now say a few words respecting the mode of preparing figures in wax; and these modes are different, according to the nature of the figure to be made. For some purposes a composition is made of four parts wax, three parts white turpentine, and some olive oil or hog's lard, suitably coloured. The bulk of the figure is formed out of this substance, with the hands; the finer parts being made by means of instruments of various forms: it is, in fact, a process of *modelling*.

In other cases the figure is cast; and we may here allude, by way of illustration, to the mode of casting plaster figures. To make a plaster cast,—of the face, for instance, liquid plaster of Paris is poured on the face; and when it has hardened, it forms a mould, which can be removed from the face, and which in its turn, will serve as a foundation on which liquid plaster of Paris can be poured, in order to produce a cast of the face. A process somewhat similar is observed in preparing waxen casts. The following has been given as a mode of imitating fruit, &c., in wax: bury the fruit half-way in clay; oil its edges, and the extant half of the fruit; then carefully pour on it tempered alabaster, or plaster of Paris, to a considerable thickness. When this has hardened, it makes the half mould, the second half of which may be obtained in the same way. The two parts of the mould being next joined together, a little coloured wax, melted, and brought to a due heat, being poured through a hole, made in any convenient part of the mould, and shaken round in every direction, will represent the original fruit.

In making wax models of the human frame, or any of its parts, a somewhat similar plan is observed. A mould is made of plaster of Paris, in several pieces, and these pieces being fastened together, melted wax is poured into the internal cavity; and the mould being then placed in cold water, the wax is soon solidified; and upon taking the mould to pieces, the wax figure can be taken out. It is said of M. Benoist, that "being by profession a painter, he found the secret of forming moulds on the faces of living persons, even the fairest and most delicate, without any danger either to their health or complexion; in which moulds he cast masks of wax; to which, by his colours, and glass eyes imitated from nature, he gave a sort of life; insomuch as, when clothed in proper habits, they bore such a resemblance, that it was difficult to distinguish between the copy and the original."

A composition of wax and other substances is employed for taking impressions of figures cut in stones. It is prepared thus: an ounce of virgin wax, melted slowly in a copper vessel, and a drachm of sugar candy pounded well, half an ounce of burnt soot, and two or three drops of turpentine. The wax is warmed if a cast is to be taken, and the stone, having been a little moistened, is pressed on it. Gem-cutters use this composition.

Sculptors sometimes form their first models of a composition, consisting of sixteen parts wax, two parts Burgundy pitch, or shoemaker's wax, and one part hog's lard: or of ten parts wax, one turpentine, as much shoemaker's wax, and as much hog's lard. This is melted over a slow fire, and afterwards well stirred and strained, so as to expel all the air.

With regard to the effect of large wax figures on the mind, the following remarks of a modern writer are not without their force: "At present wax is used for imitations of anatomical preparations, or of fruits; it also serves the sculptor for his models and studies; also for little portrait figures in *basso relievo*. The latter can be executed with delicacy and beauty; but wax figures of the size of life, which are often praised for their likeness, overstep the proper limit of the fine arts. They attempt to imitate life too closely, which, in contrast with their ghastly fixedness, has a tendency to make us shudder. In the genuine work of art there is an immortal life in idea, which speaks to our souls without attempting to deceive our senses. The wax figure seems to address the mortal in us; it is a petrified picture of our earthly part. The line at which a work of art should stop, in its approach to nature, is not distinctly marked; but it cannot be overstepped without affecting us disagreeably. Exact imitations, in wax, of vegetable productions, do not produce the same unpleasant emotions as wax images of men and animals, because they have, by nature, a more stationary character."

Do not suffer your mind to brood over the external distinctions of society. Neither seek nor avoid those who are superior in fortune; meet them on the same ground as you do the rest of your fellow-creatures. There is a dignified medium between cringing for notice, and acting like a cat that puts up her back and spits, when she sees a dog at a distance, though it may have no design of coming near to her.—MRS. CHILD.

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SIR JOSHUA REYNOLDS AND HIS WORKS.

MUSCIPULA; AFTER SIR JOSHUA REYNOLDS.

II.

THE reflecting reader, who peruses the histories of great and distinguished men, in whatever pursuit their greatness and distinction may have arisen, cannot but find cause for marvel, when he finds them guilty of remarkable inconsistencies. By the time Reynolds left the Vatican he had acquired an almost idolatrous love and respect for the works of Raphael and Michael Angelo; so that, ever after, when in England, the names of these celebrated masters were daily upon his lips, and he admonished, in his public lectures and in his private discourses, all who loved what was noble and sublime to study the "great masters," and labour at the "grand style."

But did Sir Joshua's practice and precept coincide? By no means. Why so? Because the pursuit of the

noble and sublime led to poverty; whereas the delineation of the beautiful and fair, especially when it had individual reference, led to consideration and opulence. Hence it was that the great masters whom he so fervently admired, did not influence his taste; those rather of the Venetian school, of which he speaks but little, regulated his professional character more than all the others. He admired and recommended one style, therefore, and painted after another. When actually employed in the former style, he is not considered to be remarkably eminent, while in the latter he is allowed to possess unrivalled skill; how this skill, peculiar to himself, was obtained, he has not condescended to leave any explanation.

After his return from Rome he again lived as a professional man in St. Martin's Lane, and engaged in many bickerings and altercations with the other artists of the day, on account of the new style of painting to which he had devoted himself,—a style not merely correct in likeness, but more life-looking, natural, and easy. After painting the Duke of Devonshire and Commodore Keppel with great success, the tide of popularity set in in his favour. His rooms began to be frequented by the rich and great, who were able and willing to pay liberally for good portraits of themselves, and thus Reynolds happily gained the honour of perpetuating the features of the most illustrious persons then living, whether in literature or fashionable life. While the correctness and natural animation of his portraits gratified the would-be heroes and philosophers, angels and goddesses, who flocked to him, and while he thus manufactured portraits, and swept in his largely increasing gains, he would dilate, with lofty commendations, upon Raphael and Angelo, "the grand style," and "the old masters." Like the sign-post by the road-side, he pointed the way, but followed it not himself.

By the time he was thirty years old, it is remarked of him that in force and elegance of expression, and in the natural splendour of his colouring, no one could rival him. Being a close observer of nature, he seized every happy attitude into which negligence or design threw the human frame. On one occasion he observed that one of his sitters, instead of looking the way desired, kept gazing at a beautiful picture by one of the old masters. Reynolds thereupon made this circumstance subservient to his portrait. "I snatched the moment," says he, "and drew him in profile, with as much of that expression of a pleasing melancholy as my capacity enabled me to hit off. When the picture was finished, he liked it, and particularly for that expression, though, I believe, without reflecting on the occasion of it."

Another remarkable trait in the character of Reynolds is his friendship and predilection for Johnson, who was of a nature and behaviour entirely opposed to himself. If, as the old maxim goes, "the like associate with like," or "birds of a feather flock together," this is, for the most part, for their *profit's* sake; but for their *pleasure's* sake it will often be found that dissimilar natures are most agreeably consorted.

The charge which Reynolds at first made for a *head* was five guineas, which price increased with his reputation, until it rose at last to fifty guineas. When a visitor attended for a likeness, he submitted to him a portfolio of prints and sketches, in order that the sitter might select his position. He received six sitters daily in their turns, and kept regular lists of those who sat and of those who were waiting, until a finished portrait should make way for their admission. As his commissions accumulated, he engaged several assistants who were skilful in the drapery of a picture, the tracing of the likeness and the finish of the picture belonging to himself.

In the year 1761, Reynolds, having acquired considerable wealth, bought a house on the west side of Leicester Square, where, in addition to every convenience and luxury, he set up a splendid gallery for the exhibition of his works. The wheels of his carriage were carved and gilt, and on the panels were painted the four seasons of the year. It was, in fact, a gay and expensive curiosity. It frequently happened that while the footman obtained fees for showing the gallery, the coachman also obtained perquisites by exhibiting the carriage.

The Royal Academy was instituted in the year 1768, by the union of some of the most distinguished painters of the day, and Reynolds was unanimously elected president. The king soon after favoured the new society, and knighted the president. Sir Joshua continued at the head of the society, for about 22 years, and in addition to the service done to the arts by his pencil, the students in the profession have been benefitted by the efforts of his pen. He composed and delivered discourses for the instruction of the pupils in the principles and practice of their art. In addition to the "old masters," the "grand style," and the routine of instruction in painting, he wisely impresses upon his auditors the paramount necessity of continuous industry, and undeviating earnestness of mind, in reference to the professional object of their lives. To excel in painting, as in anything else, it must be followed up, not merely as an amusement, but as an occupation of labour and perseverance.

During Reynolds's long career of prosperity, parsimony was the general rule of his character. Early necessity had in all probability engrafted in him, as in many others, the habit of thriftiness; and we know that habits, especially of an unfavourable tendency, are not easily removed. He was by nature inclined to benevolence, and he sometimes performed deeds of generosity, which cost him money and gained him no open praise; but these were exceptions in his character. Again, the general order of his domestic arrangements was on a thrifty scale, and his sister, who served as his housekeeper, encouraged thriftiness, or was indifferent to it; but plenty, freedom, and noisy bustle reigned predominant, when, upon occasions, general invitations to dinner were issued to all his admirers among the nobility and gentry, the literary world, and the genteel professions of life.

The really talented and meritorious pupils whom Reynolds had under his charge rapidly acquired skill and proficiency. Northcote painted one of the servants so like nature, that a tame macaw mistook the picture for the original, against whom it had a grudge, and flew to attack the canvass with beak and wing. Reynolds compared the circumstances to the ancient painting of the grapes and the birds. "I see," said he, "that birds and beasts are as good judges of pictures as men." In the celebrated painting of the Ugolino by Reynolds, where a child is represented as expiring, a savage, brought over by Captain Cook, on seeing it, ran forward to support the child.

In the year 1775, Johnson sat to Sir Joshua for his portrait. The picture shows him holding a manuscript near his face, and reading, he being near-sighted. Johnson complained. "It is not friendly to hand down to posterity the imperfections of any man." A looker-on observed, "You will not be known to posterity for your defects, though Sir Joshua should do his worst." This picture afterwards sold for 500 guineas.

There have been many instances of distinguished

literary characters, not being the best judges of the merits of their own performances. This was the case, we know with Milton; and Sir Joshua falls into the same predicament, when he points to the Strawberry Girl, as one of the cleverest of his performances.

A very serious complaint was made against Sir Joshua in the latter part of his life, in consequence of the colours of many of his pictures turning off and fading. Richness, brilliancy, and freshness, always distinguished his colouring; but he was often led to try modes of colouring, which, from ignorance of chemistry, and the mechanism of colours, frequently failed. He was, in fact, accused of making experiments at the expense of people for whom he had painted portraits. We regret to say that he carried on this practice for many years and ripped up many fine paintings of the Venetian school, to get at the composition of their colours.

In 1780, the Royal Academy was removed to Somerset House; and, whatever success may have ultimately attended this society, bickerings, disputes, and animosities, marked its early career, to which the conduct of Sir Joshua in one instance, at least, furnished occasion. He resigned the office of president, and resumed it at the royal wish. He soon after resigned it again, for ever! At his last visit to the Academy, a tragical scene was on the point of occurring. A beam in the floor gave way with a loud crash; but as the floor only sank a little way, it was soon supported, and the business of the day proceeded with complete composure on the part of Sir Joshua, who, all the time, had not moved from his chair.

Sir Joshua offered the Academy his collection of pictures by the great masters, at a low price; but they declined the purchase. He then made an exhibition of them for the benefit, we are told, of his faithful servant, Ralph Kirkley. But as Reynolds's love of gain was well known, it was thought to be as much for his own benefit, as his servant's. The following lines were applied to him from Hudibras:—

> A squire he had whose name was Ralph,
> Who in the adventure went his half.

Reynolds had suffered from a paralytic stroke. One day, in July, 1789, while finishing the portrait of the Marchioness of Hertford, he suddenly lost the sight of his left eye, and never used his pencil again.

His physical infirmities increased, and he died unmarried, on the 23rd of February, 1792, in the 69th year of his age. He was interred, with a grand funeral, in one of the crypts of St. Paul's cathedral, by the side of Sir Christopher Wren.

Our present article is illustrated with a copy of Sir Joshua's *Muscipula*, or the Mouse-trap Girl, which admirably displays the artist's power of permanently fixing the various expressions of the human countenance as excited by passing occurrences. The mixture of surprise and triumph expressed in the face of Muscipula, on finding the imprisoned mouse, is a happy effort. In a volume by an anonymous writer, published soon after the death of Sir Joshua, it is stated, that "the Comte d'Adhemar, the French Ambassador, is the fortunate possessor of this charming and exquisite little picture."

It is of the last importance to season the passions of a child with devotion, which seldom dies in a mind that has received an early tincture of it. Though it may seem extinguished for a while by the cares of the world, the heats of youth, or the allurements of vice, it generally breaks out and discovers itself again, as soon as discretion, consideration, age, or misfortunes have brought the man to himself. The fire may be covered and overlaid, but cannot be entirely quenched and smothered.—Addison.

MATERIALS FOR THE TOILETTE. VIII.

On Cosmetics.

The word Cosmetic is derived from the Greek, and signifies in the original "to adorn:" hence it is applied to the various preparations for refreshing and beautifying the skin.

The advantages and the comfort of retaining that clear and healthy state of the skin, with which we are usually endowed in early years, are sufficiently evident to us all; and it is not, therefore, surprising to find that at the present day, as well as in the time of the ancients, a considerable degree of attention has been given to the best means of attaining so desirable an object. Doubtless it will ever be found that simplicity of diet, and regular exercise, with a proper attention to cleanliness, will do more towards preserving the fresh and healthy appearance of youth, than all the creams, washes, and lotions in the world, for it is not possible by mere external applications to remedy those evils which arise from an unhealthy system, nor will the aid of cosmetics be resorted to with any chance of success, while intemperance, indolence, late hours, or other causes are gradually undermining the constitution, and marking their progress also on the outward frame. Yet, as various perfumed unguents and other articles have been in use for many ages, and are considered by some to possess the most beneficial effects, it becomes necessary to allow them a place in our notice of Materials for the Toilette, and to explain, as far as may be, what they are, how used, and the nature of the benefits ascribed to them; but first let us consider the estimation in which materials for anointing the body were held by the ancients.

In the Thermæ or baths of the Romans, we find that a room called the *unctuarium*, was appropriated to the anointing of the bathers, and here previously to their entering the baths they made use of a cheap coarse oil for the purpose, but on returning from their ablutions they employed fine odoriferous ointments, which were abundantly supplied, and with which they carefully anointed their bodies. Balsams, oils, and perfumes of various descriptions were arranged in pots and vases round this apartment, and the bather chose for his purpose such of them as best suited his inclination. The names of some of their anointing oils were *cinnamominum*, made of cinnamon, *irinum*, oil made from the iris, *balininum*, oil of ben; the *serpyllinum*, wild thyme, with which they rubbed their eyebrows, hair, neck and head, and oil of *sisymbrium*, or water-mint, with which they anointed their arms. Asses-milk was much in request among the Roman ladies for improving the delicacy of their skin. A lady named Poppea, though in exile, is said to have kept 500 she-asses for the purpose not merely of bathing her face, but her whole body in the milk. The use of oils was supposed to communicate strength and suppleness to the limbs, and hence we find the practice of anointing to have been common among those who were trained for wrestling and other public exercises. Respecting the custom of anointing among the Romans we have the following anecdote. The Emperor Hadrian was in the habit of going to the public baths, and of bathing and anointing himself with the common people. One day he happened to observe a veteran whom he had formerly known among the Roman troops, rubbing his back and other parts of his body against the marble wall of the anointing room, and asked him his reason for doing so. The veteran answered that he had no slave to assist him, and was, therefore, obliged to rub himself against the wall, whereupon the emperor gave him two slaves to

wait on him, and a sufficient sum for their maintenance. Another day, several old men, enticed by the good fortune of the veteran, began rubbing their backs against the marble, in the emperor's presence, in the hope of exciting his liberality also on their behalf, but Hadrian perceiving their drift, merely recommended them to rub each other.

In the public baths of the Greeks also, the custom of anointing prevailed, and of this we have the following account in ROBINSON'S *Grecian Antiquities*.

After bathing they always anointed, either to close the pores of the body, which was especially necessary after the use of hot baths, or lest the skin should become rough after the water was dried off it. It appears that the ancient heroes never used any costly ornaments, and Homer never introduces any of his heroes anointed with any other ointment than oil, except Paris, a soft and effeminate person. In succeeding ages when much of the primitive simplicity was laid aside, many still thought it indecent for men to anoint themselves with precious ointments. Solon prohibited men from selling ointments, and the laws of Sparta forbade any person to sell them. Yet women, and some effeminate men, were so curious in their choice of ointments, that they could tell with great nicety what sort suited best with each part of the body. The feet being most exposed to dust were oftener washed and anointed than other parts of the body. Women were generally employed to anoint the feet both in the heroic and later ages, and it was customary for them to kiss the feet of those to whom they thought a more than common respect was due. Thus the woman in the gospel kissed the feet of our blessed Saviour, whilst she anointed them.

It was likewise customary among the Greeks to perfume the grave-stones of their deceased relatives with precious ointments.

> Why do we precious ointments shower,
> Noble wines why do we pour,
> Beauteous flowers why do we spread,
> Upon the mon'ments of the dead?
> *Odes of Anacreon.* COWLEY'S translation.

Thus we find the use of unguents among the ancients to have been very general, but we must remember that their manner of dress rendered such applications far more necessary in their case than they can be with us. The loose robes of the Greeks and Romans afforded them but little protection from the air, and they would have been exposed to the inconveniences of a rough and chapped state of the skin in cold weather, and of an inflamed or irritated condition in extreme heat, but for the counteracting effect of unctuous applications. But among ourselves, closely protected as we are by the form of our garments from the evils above named, there seems little need of other precautionary measures. Daily ablutions in salt and water, or vinegar and water, succeeded by the friction of a coarse towel, and connected with a due attention to exercise, diet, &c., are nearly certain to keep the skin healthy and free from eruptions, and will be found to produce a far happier effect than the most costly and carefully prepared cosmetics. Since all persons may not, however, be disposed to acquiesce in our opinion, we proceed to name a few of the most approved unguents and washes to be used after a warm bath, or after the daily ablutions just spoken of. The cold cream so much in use amongst us for the cure of chapped hands, &c., is, perhaps, as efficacious for anointing the skin as any substance we can mention. After the use of it, the skin should be rubbed with a towel till all appearance of greasiness is removed. This cream may be made in the following manner: take three ounces of oil of sweet almonds, and of spermaceti and white wax, each a drachm and a half, melt them together, and beat in while warm eight parts of rose water, and two of orange-flower water, till the oil will absorb no more.

In former times, the meal or flour of beans was a celebrated cosmetic with the ladies, and was thought to possess the power of removing wrinkles. Horse-radish scraped and infused in cold milk is likewise considered a safe and excellent wash for the skin.

We might mention other washes and unguents, but it is unnecessary. Where cutaneous diseases prevail, recourse should be had to medical aid, and cosmetics should only be used under proper advice; where the skin is healthy, the less such means of improving its appearance are employed, the better. Before we dismiss the subject, it is requisite to mention an article which still obtains a place in some toilettes, and which may be considered more decidedly injurious to those who make use of it than any other cosmetic; we mean, *rouge*.

Rouge is of various kinds. The best is called *carmine*, and is a powder obtained by the union of a solution of alum, with the colouring matter of a Mexican insect, called the *cochineal* insect. Spanish and oriental wool are also used. Wool is impregnated with a beautiful red colour, and made into small cakes, in which form we receive them. Rouge dishes are also imported covered with a thin layer of colour, but the common rouge is formed by pounding certain substances which yield the desired hue. These are boiled in brandy or vinegar until three-fourths of the liquid have evaporated, and a red paint remains.

By these means an attempt is made to imitate the natural hue of health, and a bright and beautiful colour is obtained, at the expense of lasting injury to the skin. But it is not sufficient that the cheeks are made to suffer; the other parts of the face, as well as the neck and arms, must share the same fate, and means have been found to give them the delicacy of appearance necessary to set off the rouge on the face to the best advantage. A costly article obtained by dissolving real seed pearls in an acid, and then precipitating the powder by an alkali, is used by those who can afford to purchase it, while powders of an inferior description, made from mother-of-pearl, and even from oyster-shell, suffice for the less wealthy aspirants to artificial beauty. There is another powder used to whiten the skin, which very nearly resembles the real pearl powder, but which has the disadvantage of turning black on exposure to the fumes of sulphur.

But we will not dwell longer on the subject of these artifices, degrading as they are to the character of our countrywomen. We would willingly hope that a sense of the important situation they hold in a Christian country, and the influence which their example is allowed to exert on all around them, may lead them to seek for other adornings than those of mere costume or complexion, adornings which will render them lovely and beloved when time has stolen away the brightness of their youthful appearance, and has impressed their features with the peculiar mark of his own hand.

AMONGST the many acts of gratitude we owe to God, it may be accounted one, to study and contemplate the perfections and beauties of his works of creation. Every new discovery must necessarily raise in us a fresh sense of the greatness, wisdom, and power of God. He hath so ordered things that almost every part of the creation is for our benefit, either to the support of our being, the delight of our senses, or the agreeable exercise of the rational faculty. If there are some few poisonous animals and plants fatal to man, these may serve to heighten the contrary blessings; since we could have no idea of benefits, were we insensible of their contraries; and seeing God has given us reason, by which we are able to choose the good, and avoid the evil, we suffer very little from the malignant parts of the creation.—EDWARDS.

PARNELL;

AND HIS POEM OF *THE HERMIT*.

THOMAS PARNELL was born in Dublin, in 1679. He was the son of a Commonwealth man, who at the Restoration left Congleton, in Cheshire, where the family had been established for several centuries, and settling in Ireland, purchased an estate, which with his lands in Cheshire descended to the poet. He received his education at a grammar-school, from whence at the age of thirteen he was admitted into the college. In 1700 he was ordained a deacon, and in 1705 the archdeaconry of Clogher was conferred upon him. He was warmly recommended by Swift to Archbishop King, who gave him a prebend in 1713; and afterwards presented him to the vicarage of Finglas, in the diocese of Dublin. He enjoyed his preferment, however, little more than a year, dying in 1717, in Chester, at the early age of thirty-eight. Dr. Johnson observes, that the general character of Parnell is not great extent of comprehension, or fertility of mind; but his praise must be derived from the easy sweetness of his diction. The most celebrated of his poems is *The Hermit*, the origin of which is supposed by Goldsmith to have been Arabian, and the following is a literal translation from an old volume of Spanish tales in the black letter.

The Hermit.

A HERMIT of old, after having spent many years in the practice of voluntary acts of piety and severe mortification in the solitude of his hermitage, was sorely tempted by a spirit of blasphemy, representing to him as unjust those judgments of God which were hidden from his understanding. So tormented was he by these doubts, so worn with care and beset by temptation, that no rest was left for him either day or night; for he continually struggled against those foolish thoughts that rose up in his mind contrary to his will. But God never forgets the afflictions of his servants, and though none are exempt in this life from the temptations of the enemy, yet He does not suffer him to injure us to the extent of his evil designs.

One day as the hermit sat in his cell more sad than usual, being more strongly assailed by temptation, there appeared to him an angel in the likeness of a young man of agreeable aspect, who said to him, "Follow me, if thou wouldst consider and understand the hidden judgments of God, which thou art so desirous to know." Happy in the extreme, the contemplative hermit accepted the offer, with the earnest wish of having his doubts cleared up and his mind set at ease. They travelled far that day, and as night came on they reached the dwelling of a good and charitable, but poor man; he gave them a civil welcome with such provision as he had, placing on the supper table a silver cup of curious workmanship, that he greatly prized, and in the contemplation of which he took the greatest delight. The angel, however, contrived unperceived to steal away the cup that night, and carry it off with him. Taking leave next morning of their host, the angel showed the stolen cup to the hermit, who was greatly scandalized and surprised at the baseness of stealing from that poor man, who had received them into his house with so much liberality, the possession that he most prized.

The angel, however, paid little attention to the upbraidings and lamentations of his companion, and, pursuing their way, they lodged the following night at the dwelling of one who was rich in goods, but of so churlish and morose a disposition, and of such uncourteous manners, that his reception of them was very ungracious, and withal so grudging, that it called rather for complaint than thankfulness. On the departure of the travellers in the morning, the angel presented this man with a cup he hd stolen from the their former host. This renewed the sorrow of the hermit, who could not endure to see this treasure taken from the poor and kind-hearted, and given to the rich man, who possessed neither benevolence or courtesy.

Both evil and strange did the deeds of the angel appear, but he took little heed of the expostulations and bewailings of the hermit; and on they journeyed, till they reached a habitation whose owner was kind and courteous, and who cordially welcomed them. When morning came they bade him adieu; and on passing a bridge, on which was standing a favourite servant of their host, the angel precipitated him over it into the river, and he was instantly drowned.

Astonished at such cruelty, the hermit reproached his companion with his perfidy, but neither his surprise nor indignation had any effect on the angel, who travelled on till they arrived, on the fourth night, at the dwelling of an honourable and kind man, who received them with great civility. This person had a young child, whose cries were heard by the angel; he arose in the night, and strangled the infant in its cradle.

The hermit, horror-struck at such extraordinary and atrocious actions, resolved no longer to continue in companionship with the angel. Quitting the house of the good man, who was bewailing the death of a child in whom he had placed his fondest hopes, the anchorite embraced his cross, and conjured the angel, whom he now considered as a demon, to depart, and no longer bear him company. But the angel answered him, "I am no evil spirit as thou imaginest, but the angel of the Lord, who has sent me to show thee the hidden judgments of an eternal Providence, that thou so much desirest to understand. Know therefore, that I took away the silver cup from its charitable owner, because such was the satisfaction with which he surveyed it, that he became careless in the prayers he was in the habit offering up before he possessed it. I therefore deprived him of a treasure, the pride and care of which occupied too much of his thoughts, in order that his devotion might become as frequent and earnest as formerly. This same cup I gave to the rich and uncharitable man, that he might receive in this life the reward of any good work his natural inclination may have led him to perform, for God is immovably just, and leaves no evil deed without its punishment, or good without its recompense. I precipitated the servant of our third host who received us so hospitably, into the river, because he had formed the resolution of murdering his master the following night; so that by drowning that perfidious servant, God freed from a violent death one who, for his sake, had treated us with so much benevolence. I strangled in the cradle the infant son of our last kind host, because, once extremely liberal to the poor, since the birth of this child he had each day diminished the alms he had been in the habit of bestowing, in order to amass wealth for his son. I therefore took away the life of the babe in its age of innocence, in order that the father might no longer be diverted from the performance of those works of charity which he had begun to neglect. These are the most wise and equitable judgments of God, which appear to those who understand them not, strange and unjust."

With this the angel disappeared, leaving the hermit delivered from his tormenting temptations, and comforted under all his afflictions.

T. F.

PARNELL'S POEM OF *THE HERMIT.*

FAR in a wild, unknown to public view,
From youth to age a reverend hermit grew;
The moss his bed, the cave his humble cell,
His food the fruits, his drink the crystal well:
Remote from men, with God he passed the days,
Prayer all his business, all his pleasure praise.

A life so sacred, such serene repose,
Seemed Heaven itself, till one suggestion rose;
That Vice should triumph, Virtue, Vice obey,
This sprung some doubt of Providence's sway:
His hopes no more a certain prospect boast,
And all the tenour of his soul is lost:
So when a smooth expanse receives imprest
Calm Nature's image on its watery breast,
Down bend the banks, the trees depending grow,
And skies beneath with answering colours glow:
But if a stone the gentle sea divide,
Swift ruffling circles curl on every side,
And glimmering fragments of a broken Sun,
Banks, trees, and skies, in thick disorder run.

To clear this doubt, to know the world by sight,
To find if books, or swains, report it right,
(For yet by swains alone the world he knew,
Whose feet came wandering o'er the nightly dew,)
He quits his cell; the pilgrim-staff he bore,
And fixed the scallop in his hat before;
Then with the Sun a rising journey went,
Sedate to think, and watching each event.

The morn was wasted in the pathless grass,
And long and lonesome was the wild to pass;
But when the southern Sun had warmed the day,
A youth came posting o'er a crossing way;
His raiment decent, his complexion fair,
And soft in graceful ringlets waved his hair.
Then near approaching, "Father, hail!" he cried,
"And hail, my son," the reverend sire replied;
Words followed words, from question answer flowed,
And talk of various kind deceived the road;
Till each with other pleased, and loth to part,
While in their age they differ, join in heart.
Thus stands an aged elm in ivy bound,
Thus youthful ivy clasps an elm around.

Now sunk the Sun; the closing hour of day
Came onward, mantled o'er with sober gray;
Nature in silence bid the world repose;
When near the road a stately palace rose:
There by the Moon through ranks of trees they pass,
Whose verdure crowned their sloping sides of grass.
It chanced the noble master of the dome
Still made his house the wandering stranger's home;
Yet still the kindness, from a thirst of praise,
Proved the vain flourish of expensive ease.
The pair arrive: the liveried servants wait;
Their lord receives them at the pompous gate.
The table groans with costly piles of food,
And all is more than hospitably good.
Then led to rest, the day's long toil they drown,
Deep sunk in sleep, and silk, and heaps of down.

At length 'tis morn, and at the dawn of day,
Along the wide canals the zephyrs play:
Fresh o'er the gay parterres the breezes creep,
And shake the neighbouring wood to banish sleep.
Up rise the guests, obedient to the call:
An early banquet decked the splendid hall;
Rich luscious wine a golden goblet graced,
Which the kind master forced the guests to taste.
Then, pleased and thankful, from the porch they go;
And, but the landlord, none had cause of woe:
His cup was vanished; for in secret guise
The younger guest purloined the glittering prize.

As one who spies a serpent in his way,
Glistening and basking in the summer ray,
Disordered stops to shun the danger near,
Then walks with faintness on, and looks with fear
So seemed the sire; when far upon the road,
The shining spoil his wily partner showed.
He stopped with silence, walked with trembling heart,
And much he wished, but durst not ask to part:
Murmuring he lifts his eyes, and thinks it hard,
That generous actions meet a base reward.

While thus they pass, the Sun his glory shrouds,
The changing skies hang out their sable clouds;
A sound in air presaged approaching rain,
And beasts to covert scud across the plain.
Warned by the signs, the wandering pair retreat,
To seek for shelter at a neighbouring seat.
'Twas built with turrets on a rising ground,
And strong, and large, and unimproved around;
Its owner's temper, timorous and severe,
Unkind and griping, caused a desert there.

As near the miser's heavy doors they drew,
Fierce rising gusts with sudden fury blew;
The nimble lightning mixed with showers began,
And o'er their heads loud rolling thunders ran.
Here long they knock, but knock or call in vain,
Driven by the wind, and battered by the rain.
At length some pity warmed the master's breast
('Twas then his threshold first received a guest);
Slow creaking turns the door with jealous care,
And half he welcomes in the shivering pair;
One frugal fagot lights the naked walls,
And Nature's fervour through their limbs recalls:
Bread of the coarsest sort, with eager wine,
(Each hardly granted) served them both to dine;
And when the tempest first appeared to cease,
A ready warning bid them part in peace.

With still remark the pondering hermit viewed,
In one so rich, a life so poor and rude;
"And why should such," within himself he cried,
"Lock the lost wealth a thousand want beside?"
But what new marks of wonder soon take place,
In every settling feature of his face,
When from his vest the young companion bore
That cup, the generous landlord owned before,
And paid profusely with the precious bowl
The stinted kindness of this churlish soul.

But now the clouds in airy tumult fly;
The Sun emerging opes an azure sky;
A fresher green the smelling leaves display,
And, glittering as they tremble, cheer the day:
The weather courts them from the poor retreat,
And the glad master bolts the wary gate.

While hence they walk, the pilgrim's bosom wrought,
With all the travail of uncertain thought;
His partner's acts without their cause appear,
'Twas there a vice, and seemed a madness here:
Detesting that, and pitying this, he goes,
Lost and confounded with the various shows.

Now Night's dim shades again involve the sky,
Again the wanderers want a place to lie,
Again they search, and find a lodging nigh,
The soil improved around, the mansion neat,
And neither poorly low, nor idly great:
It seemed to speak its master's turn of mind,
Content, and not to praise, but virtue kind.

Hither the walkers turn with weary feet,
Then bless the mansion, and the master greet:
Their greeting fair, bestowed with modest guise,
The courteous master hears, and thus replies:
"Without a vain, without a grudging heart,
To Him who gives us all, I yield a part;
From Him you come, for Him accept it here,
A frank and sober, more than costly cheer."
He spoke, and bid the welcome table spread,
Then talk of virtue till the time of bed,
When the grave household round his hall repair,
Warned by a bell, and close the hours with prayer.

At length the world, renewed by calm repose,
Was strong for toil, the dappled Morn arose;
Before the pilgrims part, the younger crept,
Near the closed cradle where an infant slept,
And writhed his neck: the landlord's little pride,
O strange return! grew black, and gasped, and died.
Horror of horrors! what! his only son!
How looked our hermit when the fact was done;
Not Hell, though Hell's black jaws in sunder part,
And breathe blue fire, could more assault his heart.

Confused, and struck with silence at the deed,
He flies, but trembling, fails to fly with speed.
His steps the youth pursues; the country lay
Perplexed, with roads, a servant showed the way:
A river crossed the path; the passage o'er
Was nice to find; the servant trod before;
Long arms of oaks an open bridge supplied,
And deep the waves beneath the bending glide.
The youth who seemed to watch a time to sin,
Approached the careless guide and thrust him in;
Plunging he falls, and rising lifts his head,
Then flashing turns, and sinks among the dead.

Wild, sparkling rage inflames the father's eyes,
He bursts the bands of fear, and madly cries,
"Detested wretch!"—But scarce his speech began,
When the strange partner seemed no longer man:
His youthful face grew more serenely sweet;
His robe turned white, and flowed upon his feet;
Fair rounds of radiant points invest his hair;
Celestial odours breathe through purpled air;
And wings, whose colours glittered on the day,
Wide at his back their gradual plumes display.
The form ethereal bursts upon his sight,
And moves in all the majesty of light.

Though loud at first the pilgrim's passion grew,
Sudden he gazed, and wist not what to do;
Surprise in secret chains his words suspends,
And in a calm his settling temper ends.
But silence here the beauteous angel broke
(The voice of music ravished as he spoke).
"Thy prayer, thy praise, thy life to vice unknown,
In sweet memorial rise before the throne:
These charms, success in our bright region find,
And force an angel down, to calm thy mind;
For this, commissioned, I forsook the sky,
Nay, cease to kneel—thy fellow-servant I.
"Then know the truth of government divine,
And let these scruples be no longer thine.
"The Maker justly claims that world he made,
In this the right of Providence is laid;
Its sacred majesty through all depends
On using second means to work his ends:
'Tis thus, withdrawn in state from human eye,
The power exerts his attributes on high,
Your actions uses, nor controls your will,
And bids the doubting sons of men be still.
"What strange events can strike with more surprise,
Than those which lately struck thy wondering eyes?
Yet, taught by these, confess the Almighty just,
And where you can't unriddle, learn to trust!
"The great, vain man, who fared on costly food,
Whose life was too luxurious to be good;
Who made his ivory stands with goblets shine,
And forced his guests to morning draughts of wine,
Has, with the cup, the graceless custom lost,
And still he welcomes, but with less of cost.
"The mean, suspicious wretch, whose bolted door
Ne'er moved in duty to the wandering poor;
With him I left the cup, to teach his mind,
That Heaven can bless, if mortals will be kind.
Conscious of wanting worth, he views the bowl,
And feels compassion touch his grateful soul.
Thus artists melt the sullen ore of lead,
With heaping coals of fire upon its head;
In the kind warmth the metal learns to glow,
And loose from dross the silver runs below.
"Long had our pious friend in virtue trod,
But now the child half-weaned his heart from God;
(Child of his age) for him he lived in pain,
And measured back his steps to Earth again.
To what excesses had his dotage run?
But God, to save the father, took the son.
To all but thee, in fits he seemed to go,
(And 'twas my ministry to deal the blow,)
The poor fond parent, humbled in the dust,
Now owns in tears the punishment was just.
"But now had all his fortune felt a wrack,
Had that false servant sped in safety back;
This night his treasured heaps he meant to steal,
And what a fund of charity would fail!
Thus Heaven instructs thy mind: this trial o'er,
Depart in peace, resign, and sin no more."
On sounding pinions here the youth withdrew,
The sage stood wondering as the seraph flew.
Thus looked Elisha when, to mount on high,
His master took the chariot of the sky;
The fiery pomp ascending left to view;
The prophet gazed, and wished to follow too.
The bending hermit here a prayer begun,
"*Lord! as in Heaven, on Earth thy will be done:*"
Then gladly turning sought his ancient place,
And passed a life of piety and peace.

COURAGE in suffering for a good cause is well; but if courage be not tempered with meekness, if our resentments burn in our breasts, and boil over in projects of revenge, opprobrious language, or any sort of indecent bitterness, neither we nor our cause are like to gain by it.—STANHOPE.

WE read, that, in certain climates of the world, the gales that spring from the land, carry a refreshing smell out to sea, and assure the watchful pilot, that he is approaching to a desirable and fruitful coast, when as yet he cannot discern it with his eyes. And to take up once more the comparison of life to a voyage, in like manner it fares with those, who have steadily and religiously pursued the course which heaven pointed out to them. We shall sometimes find by their conversation towards the end of their days, that they are filled with hope, and peace, and joy; which, like those refreshing gales and reviving odours to the seaman, are breathed forth from Paradise upon their souls; and give them to understand with certainty, that God is bringing them unto their desired haven.—TOWNSON.

ST. OMER.

II.

THE town of St. Omer is built with great regularity, partly on an eminence, and partly on a tract of marshy ground, through which the small river Aa finds its way. The general character of the streets is, that they are wide and airy; but the houses have rather a mean appearance, being in general low, of irregular size, and of dissimilar architecture. In the various streets there are a considerable number of fountains, which assist in imparting some degree of cheerfulness to a town which is in many other respects rather heavy and gloomy. There is only one square, or "place" in the town, which is called the "Place d'Armes," one side of which is occupied by the *Hotel de Ville*, represented in our engraving.

The cathedral is a building of considerable beauty, and is dedicated to *Notre Dame:* it is a very ancient Gothic edifice, and contains the tomb of St. Omer, from whom the town derived its name. The interior of the cathedral contains many bas-reliefs of Norman origin, an altar of great richness, chapels enriched with marbles, tombs of considerable magnitude, and a great number of reliques. On one of the sides of the portal of the cathedral is a large, square, elevated clock, upon the upper part of which a guard used to be stationed: the gates of the town, which were closed during the night, were not suffered to be opened in the morning until the guard had looked around and had announced that no apparent enemies or intruders were without. The cathedral contains a fine picture of the "Descent from the Cross," by Rubens.

The church or abbey of St. Bertin, to which we alluded in the former article, is, like the cathedral, a fine Gothic building. The college of St. Omer has been celebrated as a seminary for the education of young men from England and Ireland destined to the Roman Catholic priesthood. It contains a public library of sixteen thousand volumes.

At about two miles from St. Omer are the celebrated floating islands, in the marshes of the abbey of Clairmarais. They are sustained on the surface of a kind of bog or morass, without sinking to the bed of it. They may be moved about from place to place, in the same manner as a floating vessel. As there is excellent pasturage in these little isles, the inhabitants of the country draw them towards *terra firma*, drive their cattle on to them, and then send the isles out again on the morass; but since the trees, the roots of which served to bind and collect the soil, have been cut down, the islands are rapidly disappearing.

There is a suburb to the town called Haut Point, built along the quays which border the canal: it is chiefly inhabited by gardeners, who by a judicious system of draining, have rendered what was formerly an unsightly marsh, a spot of great productiveness and beauty. The borders of the canal just alluded to, as well as the ramparts, and the avenue of the gate leading to Calais, form pleasant walks. Besides the buildings already mentioned, there are in St. Omer, an arsenal (containing a large collection of arms,) an academy for architecture and design, a theatre, and several hospitals.

The town is, as before observed, fortified with much strength; but its chief strength has been said to be in the power of laying the surrounding country entirely under water, by means of canals, &c. Its proximity to the sea does not afford it so many advantages as might be expected. Fishing is the principal use which the inhabitants make of the sea. Considering the good roads and canals which connect it with Dunkirk, Gravelines, Calais, Aire, and other towns,

its commerce and manufactures are but limited. They are considerable in variety, but not in extent, and consist of linen cloth, hats, stockings, muslins, cotton, leather, and in particular woollens, of which there are twenty-two manufactories, with eleven hundred workmen. There is a kind of snuff manufactured here, which bears the name of the place. There are also manufactories in metal, but not great in extent.

St. Omer has given birth to a few individuals who have made themselves a reputation. Jacques Malebrancque was born here, in 1582, and was admitted into the Jesuits' college at the age of twenty-two, where he taught logic, and other branches of knowledge. He translated several French works into Latin; but is principally known by his history of the Morins, a people of ancient Belgium; this work traces their history from very ancient times to the reign of Charles the Fifth. Malebrancque died at Tournay, in 1632.

Another native of St. Omer was Martin du Cygne, who was born in 1619, and entered into the Society of the Jesuits at the age of eighteen, and after having taught the junior classes for five years, he became professor of rhetoric, which situation he held for forty years. He became in time prefect of the college at St. Omer. He published a great number of works which have attained a high reputation, principally on subjects connected with the Belles Lettres; and one of his labours was to present the works of Plautus and Terence, in such a form as might fit them for the perusal of young persons, which, in their original state, they scarcely were, on account of the looseness of their language. Martin du Cygne died in 1669.

A third writer whom St. Omer claims as one of her children was Claude Dansque. He was born in 1566; and, like the two preceding, was admitted to the order of the Jesuits; he was also canon of Tournay; and a very learned man. He wrote a Latin translation of the Homilies of St. Basil. He also published new editions and translations of many of the ancient writers. The floating islands at St. Omer, to which we have before alluded, attracted his attention, and he wrote a treatise on the principal phenomena connected with the waters, under the title of "Earth and Sea." There were other works published by Dansque, to which we need not here allude.

Lastly, a sculptor of some note, named Anselm Flamer, was a native of St. Omer.

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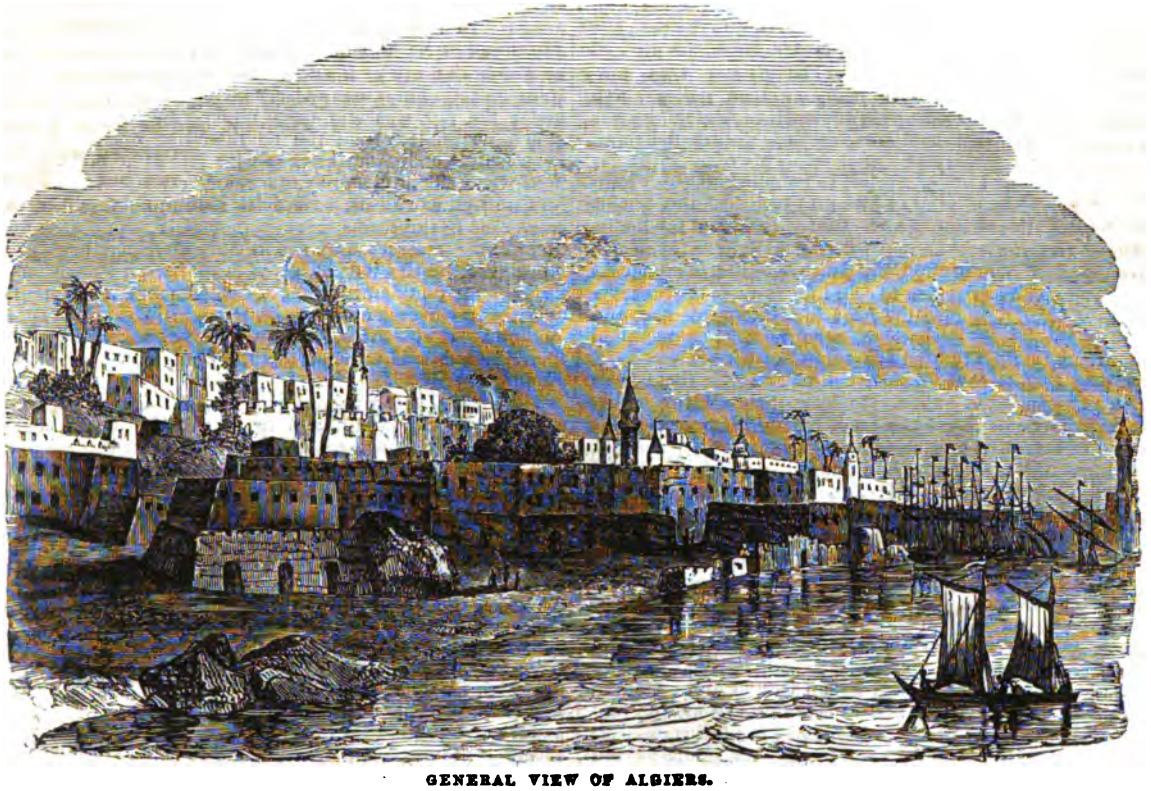
SOME ACCOUNT OF ALGIERS, AND ITS CONQUEST BY THE FRENCH.



GENERAL VIEW OF ALGIERS.

THERE are few persons who have not heard of Algiers,—its Dey,—its corsairs, or pirates,—its bombardment by Lord Exmouth,—and its occupation by the French as a colony. These have formed the subjects of many histories, memoirs, pamphlets, and newspaper reports of so much interest, that we think the general reader will be glad of a comprehensive view of these scattered materials.

We propose, therefore, to devote two Supplements to Algiers; and to convey such information as we may have to offer, in the following order:—1. A description of its geographical position; 2. Sketch of the principal events of its history, down to the bombardment by Lord Exmouth; 3. Account of the operations of the French, since 1827; 4. Description of the towns and principal buildings; 5. Account of the inhabitants, their customs, manners, dress, &c.; 6. Miscellaneous and general details.

1. *Description of the Country.* The northern part of Africa, from Egypt to the Atlantic Ocean, has been long known by the name of *Barbary*, from *berber*, the term applied to one portion of its inhabitants. It embraces about two thousand miles of coast; but is not included under one kingdom, as it is at present divided into Barca, Tripoli, Tunis, Algiers and Morocco.

This district was known in ancient times by the names of Marmorica, Cyrenaica, Carthage, Numidia, and Mauritania, proceeding from the east towards the west; of which it appears that the present country of Algiers occupies pretty nearly the situation of Ancient Numidia. The whole of these countries are similarly situated in two respects; *i. e.*, they are all bounded on the north by the Mediterranean, and on the south by the Atlas mountains, or by the sandy deserts of Central Africa.

Algiers is bounded on the east by the river Zaine, which divides it from Tunis; on the west by the mountains of Trara, which separate it from Morocco; on the south by the Atlas mountains, and on the north by the sea. It is about five hundred miles in length, and varies in breadth from forty to a hundred and fifty miles. It was, before its occupation by the French, divided into provinces, Algiers, Constantina, Titteri, and Mascara; the first of which was governed by the Dey, in person, while the others were placed under Beys, or lieutenants.

2. *Sketch of its History.* The northern shore of Africa, including what is now called Algiers, was the theatre of many important events in early history; but we must confine ourselves to those which belong more particularly to Algiers.

Mauritania, in the time of Julius Cæsar, included Algiers, and was, with it, reduced by the Romans to the condition of a Roman province. In the course of ages, one conqueror after another expelled the previous possessors, so that after being the property of the Romans, Algiers passed into the possession of the Vandals, the Emperor Justinian, and the Saracens or Arabs. This latter remarkable people retained the country for about four hundred years; it was divided into a great number of petty kingdoms, under chiefs of their own choosing; but all subject to the Caliph of Bagdad. At last, in 1051, an insurgent chief named Abubeker-ben-Omar, collected a powerful army of malcontents, and defeated, one by one, the whole of the sheikhs, or petty tyrants, and brought all the country under his own dominion.

This man thus became a sovereign, and was succeeded by his son Yusef, who so extended his dominions, that they shortly included almost the whole of northern Africa. This dynasty lasted for some time, but was ultimately overturned, and Algiers became the scene of repeated con-

flicts for the crown, between rival Arab competitors. These petty contests we shall pass over, and come down to the year 1505, when a new feature was given to Algerine history, by the introduction of European troops.

In the year just mentioned, the court of Spain, seeing a contest for the throne of Algiers between three competitors, did as lookers-on have often done; they stepped in, and seized the prize for themselves. They sent a powerful fleet and army, which conquered the principal towns in succession, and reduced the whole country under the Spanish yoke. This continued for about eleven years; but the Algerines, hearing that the king of Spain was dead, tried to regain their liberty; and asked the aid of Aruch Barbarossa. This remarkable man was the son of a Greek potter, and having contrived to get possession of a few ships, he became a daring pirate, calling himself "the friend of the sea, and the enemy of all who sailed upon it." He was the terror of the whole Mediterranean, and the Algerines, in an evil hour, sent to him for assistance. The assistance was rendered. He came with 6000 men, eighteen galleys, and thirty barks. On Barbarossa's approach to Algiers, he was welcomed by all the inhabitants, as their future deliverer. But he took a summary way of showing his friendship; for he caused the old king of Algiers to be murdered, and himself to be proclaimed king in his stead,—his soldiers shouting, "Long live King Aruch Barbarossa, the invincible king of Algiers, the *chosen of God* to deliver the people from the oppression of the Christians; and destruction to all who shall oppose or refuse to own him as their lawful sovereign." This frightened the Algerines into obedience, and they submitted to Barbarossa, who no sooner mounted the throne, than he treated his subjects with such cruelty, that they used to shut up their houses and hide themselves when he appeared in public. In consequence of this, a plot was soon formed against him; but having discovered it, he caused twenty of the principal conspirators to be beheaded, and their bodies to buried in a dunghill: and laid a heavy fine on those who survived: this completely crushed the spirit of the Algerines.

But at length, the son of the murdered prince, in combination with the Spanish authorities, resolved to attempt to regain Algiers, which was to be given to Spain, as the lighter master of the two. The result was, that two successive expeditions were sent out from Spain,—Spaniards, Moors, and Arabs, joining against Barbarossa; and after a variety of contests, Barbarossa was killed, at some distance from the city of Algiers. But he left behind him a brother, Hayradin, who resembled him in boldness, vigour, and courage. He was immediately proclaimed king by his soldiers; and feeling that he was too weak to contend single-handed against his opponents, he adopted the plan of giving up Algiers to Turkey, on condition of being supported in the office of bashaw, or viceroy. This offer was accepted: troops were sent to his assistance, and he made vigorous preparations for defence. He built a strong mole for the protection of his ships; on which he employed 30,000 Christian slaves, whom he compelled to labour without intermission for three years. He besides obtained constant supplies of money from the Grand Signior, by which he was enabled to build a strong fort, and to erect batteries on all places that might favour the landing of an enemy:—in short, he soon became powerful to a degree alarming to the states of Europe.

The Grand Signior, probably thinking that Hayradin was making himself too powerful, raised him to a higher dignity nearer home, and sent Hassan Aga to fill his place at Algiers. This man soon engaged in such a series of piratical attacks on the opposite coast of Europe, that Spain, France, and Italy, all became alarmed, and entreated the Emperor Charles the Fifth to put a stop to the pirate's career. Upon this the emperor fitted out an immense armament, of 30,000 troops, 120 ships, and 20 galleys; and such was the enthusiasm that actuated all engaged, that the Pope promised plenary absolution of sins and a crown of martyrdom to those who either fell in battle or were made slaves,—many young noblemen and gentlemen, as well as the knights of Malta, attended as volunteers,—and ladies of birth and character, together with the wives and daughters of the officers and soldiers, followed, with a design to settle in Barbary after the conquest should be completed.

This pompous expedition was, however, doomed to an ignominious failure. On approaching the city, the garrison were dismayed at the force of their antagonists; but prepared for resistance. The Spaniards landed, and immediately built a fort, under the cannon of which they encamped, and diverted the course of a spring, which supplied the city with water. The garrison became thus distressed; and Hassan was about to surrender, when he received information that forces were approaching from one of his western provinces: this resolved him to defend the city to the last. While the one party was attacking and the other defending the city of Algiers, a mad prophet, attended by a multitude of people, entered the Senate-house at Algiers, and foretold the speedy destruction of the Spaniards, before the end of the moon, and exhorting the inhabitants to hold out to that time. Whether this man was mad or crafty, certain it is, that on October 28, 1541, a dreadful storm of wind, hail, and rain arose from the north, accompanied with violent shocks of earthquake, and a dismal and universal darkness, both by sea and land; so that the sun, moon, and elements seemed to combine together for the destruction of the Spaniards. In that one night eighty-six ships and fifteen galleys were destroyed, with all their crews and military stores, by which the army on shore was deprived of all means of subsistence. Their camp also, which spread along the plain under the fort, was laid quite under water by the torrents which descended from the neighbouring hills. Many of the troops, in endeavouring to remove into some better situations, were cut in pieces by the enemy; while several galleys and other vessels, seeking to gain some neighbouring creeks along the coasts, were immediately plundered, and their crews massacred by the inhabitants. By the 16th of November Charles left Africa, with the wreck of his once formidable armament, having lost 8000 men, 300 colonels and other officers, and all his tents, artillery, and heavy baggage. Besides this, so many prisoners were taken, that the Algerines sold some of them, by way of contempt, for an *onion* per head.

Thus ended this much vaunted expedition, to the humiliation of the Christians, and the joy of the Turks, whose hold upon Algiers was rendered still firmer by these events. The chief authority, after this, passed from one bashaw to another; and although the Spaniards made other attempts at conquest, the Turks succeeded in keeping them at bay. Throughout that century a constant succession of Turkish bashaws oppressed the native Algerines; but about the year 1600 a change took place in the mode of government, by which *Deys*, instead of Bashaws, were the chiefs. The janisaries and militia of Algiers, dissatisfied with the cruelty and extortion of the bashaws, petitioned the Sultan to allow them to choose a *Dey*, or governor from among themselves, by which the interest of the governor would more nearly assimilate with that of the governed: they, on the other hand, engaging always to acknowledge the Sultan as their sovereign, to pay tribute to him, and to lodge and maintain his Bashaw in the province of an ambassador, but not as a governor of Algiers. This proposal was accepted, and henceforth Algiers was almost independent of Turkey.

The Algerines now became a powerful naval people; for the Moors, who were expelled from Spain in 1609, retreated to Algiers, and became able seamen; so that the Algerine fleet numbered forty sail, which attacked the ships of every European nation indiscriminately. Shortly afterwards their independence was increased, by throwing off all allegiance to the Sultan.

During the remainder of the seventeenth, and the whole of the eighteenth centuries, the Algerines from time to time attacked the ships of those powers that were weakest; although they showed something like deference and fear in regard to those of England and France. The countries which suffered more particularly were such as Sicily and Sardinia. Not content with capturing their vessels in the open sea, the corsairs made descents upon their shores, sweeping off not only property, but all persons of every age, sex, and rank, who could be valuable in the market as slaves.

This course continued during the revolutionary war, all the great powers being too much engaged to attend to the piracies of the Algerines. But, after peace was restored, England turned her thoughts towards Algiers, with the benevolent wish of checking the atrocities of the corsairs. An expedition was sent out under Lord Exmouth, with a demand for the general liberation of the slaves actually in bondage, and the entire discontinuance, for the future, of their detestable traffic. The Algerines were frightened into submission, liberated some slaves, and made fair promises, after which Lord Exmouth returned to England.

But old habits, especially profitable ones, are not soon conquered. The Algerines were furious at the thought of breaking up their corsair system; and as soon as Lord

Exmouth had left them, they renewed their excesses with more cruelty than ever, and actually murdered a large band of peaceful Neapolitan fishermen, for the sheer purpose of showing how cordially they detested Christians.

When these tidings reached England, it was seen that nothing less than extreme measures would suffice; and a very powerful armament was therefore fitted out, and placed under Lord Exmouth's command. In July, 1816, he went with thirteen vessels to the Mediterranean, where he was joined by six Dutch frigates, under Admiral Capellan. Knowing the inhumanity of the Dey, Lord Exmouth was anxious to get off the English Consul and his family before the attack began. Captain Dashwood succeeded in favouring the escape of the consul's wife and daughter, disguised in the uniform of naval officers: an attempt was also made to carry off his infant child in a basket, but it betrayed itself by its cries; it was, however, afterwards released, although the consul was placed in close confinement. The battle began on the 26th, and was one of a very severe description, for Algiers was fortified in a masterly manner, defended by a considerable fleet in front, and by forty thousand soldiers within. The demand which Lord Exmouth made was, that Christian slavery should be entirely abolished,—that all slaves then within the territory of Algiers should be liberated,—that all ransoms obtained since the commencement of the year should be repaid,—and that the consul and all the British subjects should be released. This demand was refused, and Lord Exmouth directed a bombardment of the city, which continued seven hours, until the principal batteries had been silenced, ship after ship of the Algerine fleet had caught fire, and finally, the whole fleet and arsenal were in one body of flame, which illumined the whole harbour and bay. The result of this expedition was, that 1083 captives were set at liberty,—ransoms amounting to 383,500 dollars were repaid to Sicily and Sardinia,—the consul was liberated, and received a compensation for the insults he had endured,—and a treaty was signed by which the Dey bound himself to discontinue the practice of Christian slavery, and hereafter to treat prisoners of war according to the established practice of civilized nations.

3. *Occupation by the French.*—We now approach a period when Algiers was destined to change masters. After the castigation which the Dey received from Lord Exmouth, he restored the town to its former strength, and gradually resumed his piratical course. In the next ten or twelve years he was frequently embroiled with the French; and at last, matters rose to such a pitch that a large armament was sent out from France to Algiers in 1830.

The expedition to Algiers undertaken by the French has been the theme of many stormy discussions, both in England and France: in the latter country in particular, numerous books and pamphlets have been written, some in approval, and some condemnatory, of the steps pursued by the government. On the one hand it is stated, that the strong tendency to piracy on the part of the Algerines made it incumbent on the French to adopt severe measures: on the other hand it is said, that in some mercantile transactions between the Dey and the French Consul, the former was deprived of a share that justly belonged to him, and openly insulted the consul thereon, which led to hostilities on the part of France: while a third party broadly states, that the disturbed state of France during 1829 and 1830 induced the ministers to appeal to the love of glory of the French, by planning an expedition, which should draw off their attention from political affairs at home. We are not able, even if we were willing, to decide which was the real cause of the expedition; but it is not improbable that all were combined.

But whatever we may think of the expedition, it is our office to detail the course of events, as fully as space will permit.

It was in April, 1827, that the Dey of Algiers, irritated at the result of some negociation between him and France, ventured to strike the French consul on the mouth, in the presence of other consuls. Reparation for this insult was demanded and refused; and the effect was, that orders were sent out to blockade the city of Algiers. The Dey, however, took vigorous measures to defeat the intention of the French, and the blockade continued three years, with scarcely any loss to the Algerines, but with a loss to the French of 20,000,000 francs, several vessels, a great number of seamen, and Admiral Collet, the Commander of the blockade. During this period the French made many attempts to induce the Dey to accede to certain terms of compromise which they proposed; but he, either confident in his own strength, or thinking the demands of the French unjust, refused all compromise. After many stormy discussions in the French Cabinet, it was resolved to fit out a powerful armament for Algiers. Orders were sent to the various sea-ports, to prepare vessels sufficient to convey 35,000 men with all their arms and ammunition; and in a few months there were assembled at Toulon 11 ships of the line, 23 frigates, 26 brigs, 33 corvettes, 7 steam boats, 103 war boats, mounted by 27,000 marines, besides many other small vessels.

This formidable armament sailed from Toulon about the middle of May, 1830, under the command of General Bourmont, having on board an army of 37,000 men, 4,000 horses, and 180 pieces of cannon, together with many volunteers from foreign countries, and men of science, who wished to take advantage of the opportunity to obtain correct information respecting the natural resources, &c., of Algiers.

On the 29th of May, the flotilla came in sight of Algiers; but such a violent east wind arose, that it was judged prudent to take temporary shelter in a harbour of one of the islands in the Mediterranean; and it was not until the 13th of June that the fleet found itself again within sight of Algiers. After a careful inspection of the place, it was judged imprudent to attempt an open attack on the port, while it appeared difficult to attempt a landing, less on account of the numerous and formidable batteries erected on the coast, than on the difficulty of the anchorage But it was ultimately resolved that they should land on the peninsula of *Sidi-Ferruch*, about five leagues to the west of Algiers. The French expected to find this place covered with batteries, and had made their arrangements accordingly; but it was found almost unfortified. While the ships were anchoring, a few shots were fired from the shore; and a number of mounted Arabs, covered with their *bernous*, or white cloak, were galloping along the strand, making observations on the ships, and reporting the result to their chiefs. On the 14th the army landed, protected on different sides by vessels ready to pour out a fire on any assailants from the land.

On the 19th Ibrahim attacked the French, and a battle was fought at Staoueli, in which the French certainly gained a most decisive victory; although we will not venture to place much reliance on the accounts of the comparative numbers of killed and wounded in the two armies: when we see it stated in a French work that the Algerine loss amounted to 5,000 men, and the French to only 130, we feel inclined to say that the account is much more marvellous than true, and that it partakes of that character of extravagance which distinguishes almost all victors, fresh from the field of conquest.

It was an important step in the advance of the French, that they found the enemy's camp abundantly supplied with every kind of ammunition. The Turks and Moors re-entered Algiers, the Arabs retreated to their mountains and deserts, and the French soldiers began to think that their labours were at an end; but the general judged it prudent to delay the siege of the city until all the artillery and cavalry had landed, which contrary winds had hitherto prevented from being effected.

The first two divisions encamped on the field of battle which they had conquered, and constructed a redoubt on a point which commanded the country between there and Algiers. Others were erected to keep a line of communication with Sidi-Ferruch, and the sappers opened on the ruins of an old Roman road, a military way leading almost to the ramparts of Algiers. From the 20th to the 24th of June, nothing farther than skirmishes took place between the belligerent parties; but on the morning of the last mentioned day, a more serious attack was made on the French advanced posts by a body of 20,000 Algerines; this was, however, successfully resisted by the French, though at the expense of the life of Amedée de Bourmont, one of the four sons of the general who were in the expedition. It was not until the 28th of June that the heavy artillery was able to be landed, and during the interval, the French advanced posts suffered considerably by the constant firing from two batteries and from some Algerine troops which occupied a commanding position.

On the 29th, the general having all in readiness to commence the siege, made arrangements for attacking the Algerines on the heights, driving them towards Algiers, and then investing the city. The attack was vigorously made, and the Algerines, taken in flank, attacked in front, and menaced from behind, abandoned their position, which was

soon after occupied by the French general and his staff. From this elevated spot they commanded a view of the *Kasba*, or citadel, and the whole city: it was there seen, that the principal portions of the city were commanded by a fortified position called the Castle of the Emperor, while the castle itself was commanded by the position which the French occupied.

To attack the castle, then, was the object of the French general; and from the 29th of June to the 4th of July his soldiers were busily engaged in digging trenches and erecting batteries; but they were much harassed during the progress of the works by the Turks, who made frequent sorties, and killed many of the French. By the 4th the French had erected three besieging batteries of twenty-six large cannon, and were ready to proceed in their attack on the city. Meantime a portion of the fleet had been ordered into such a position as to be able to attack the batteries of the port and the maritime forts, in order to draw to that side some of the Algerine garrison. There was also an attack by armed boats on the lower part of the batteries and fortifications.

The Turks had hitherto neither seen nor heard anything of the heavy artillery of the French; and imagining that they had none, they felt tolerably calm. But on the 4th of July they were terribly undeceived. At a given signal all the French batteries were unmasked, and opened a terrible fire on the town. The Turks returned the fire with vigour and courage, and for five hours a constant cannonading took place on both sides. Walls were seen to fall, pieces of ordnance to be overturned, and the soldiers of the garrison to be killed with fearful rapidity. The besieged proved worthy of a better fate than awaited them, but they could fight no longer: all their cannons were useless, and the Dey at last gave orders that the castle should be given up to the French. Just as the latter were beginning to mount the walls, an awful explosion was heard, and the tower of the castle was seen to mount in the air: the magazine had exploded and scattered ruin all around it. A thick black column ascended 500 feet into the air, and shortly afterwards pieces of artillery, bombs, bullets, enormous masses of stone, and mangled human bodies, fell in all directions. The upper part of the tower had disappeared, part of the walls of the castle were thrown down, and the rest was pierced full of holes.

The French now entered the breaches into the castle over the fuming and smoking ruins, and found that the Turks had abandoned it and gone into the Kasba and interior parts of the city. The besiegers proceeded at once to erect batteries on the ruins of the castle, in order to be enabled to attack the Kasba.

The Dey had imagined that the castle would be able to hold out against the French until the rainy season, when their destruction would have been certain; but when he saw his power upset, his empire destroyed, and himself likely to fall into the hands of the Christians, his confidence gave way to fear and despair. The city was in a tumult: all idea of farther resistance was given up, and the Dey demanded the cessation of hostilities. At 2 o'clock in the afternoon a messenger was sent from the Kasba, and was received by the French general on the ruins of the castle. The messenger offered in the name of the Dey to give up certain demands which he considered he had upon France, to submit to the reparation which had been demanded of him before the rupture, to increase the privileges of French commerce, and to pay all the expenses of the war, if the French would leave the country. General Bourmont refused these terms; he demanded that the Dey, the troops, and the city should surrender at discretion. The British Consul offered his mediation; but the French general pointedly declined it. The messenger retired; and shortly afterwards two others came and stated that the words "surrender at discretion" would be taken by the Turkish soldiers as implying a voluntary sacrifice of their persons, families, and property, and that under that idea they would rather perish than submit, and that Algiers and the riches contained in it should perish with them. This determination induced Bourmont to reconsider his demand; and he made the following offer:—that if Algiers and all its forts were forthwith given up to him, he would leave the Dey his life, his liberty, and the possession of all that personally belonged to him, permitting him to retire with his family and his moveable property, to any place he might think proper;—the same offer was made to all the Turkish soldiers;—and to all that remained the general guarranteed the free exercise of their religion, and that their families, their property, their commerce and their industry, should be inviolably respected.

This offer was sent to the Dey, and he immediately submitted it to a Divan, where it met with a stormy reception. Some of the younger members, who had not sufficiently enriched themselves, proposed to murder the Dey, divide the national treasure among them, set fire to the town, and escape to the mountains, but those who had anything to lose saw the wildness of this proposal, and finally overruled it. The result was that the offer of Bourmont was accepted, and it was agreed that the city should be given up to the French at 10 o'clock on the following morning (5th July).

At the appointed hour the French entered the town, their artillery at their head, and colours flying, and were soon afterwards gratified at seeing a host of Christians set free, their irons having been ordered by the Dey to be knocked off as soon as the castle was taken by the French. The Dey shortly before the appointed hour, began to remove his family, jewels and treasure, to a house which he possessed in the lower quarter of the town, and shortly afterwards the French entered the Kasba.

Thus fell Algiers, after having been for three centuries the nucleus of a system of brigandage and piracy which struck terror into Christian mariners. The first care of the general, after entering the palace, was to secure the enormous treasure concealed in five or six strongly secured apartments. This treasure consisted of money of all nations, and was the accumulation of three centuries of the share which fell to the Dey of all the prizes taken by the corsairs. A commission of officers was ordered to take an inventory of the treasure, and to see it conveyed to France. As to the amount of it, the most contradictory accounts have been given. One writer states it at at 400,000,000 francs, another at 270,000,000,—while the official accounts bring it down to a much smaller amount:—again, some state that the victorious general scrupulously sent home all the treasure, while others aver that the sum paid to the state was marvellously less than that which the victors actually received. On these points we cannot pretend to decide, but must here give the official statement. The amount in gold, silver, and precious stones found in the Kasba, is stated at 48,000,000 francs, in linen and other wares 3,000,000, in bronze cannon 4,000,000; making in all about 56,000,000; and that the whole expense of the expedition amounted to 49,000,000; so that the treasure more than covered the whole expenditure. Besides this, the other species of public property fallen into the hands of the French in Algiers were estimated at 50,000,000 francs. As these were the official accounts, we prefer giving them to any derived from private sources.

Algiers taken, the presence of the ex-Dey and the Turks was felt to be embarrassing to the French. Besides, the life of the Dey was by no means secure; for the Turks, some of whom attributed their misfortunes to his obstinacy, and others to his weakness, were well disposed to put an end to him by way of revenge. The French general gave the Dey a guard of grenadiers to protect him, but suggested to him the propriety of his leaving the city. As he showed no inclination to seek an asylum in any of the Mahometan states, the English consul offered him one at Malta, and the French suggested Livorno; but he finally decided on Naples, where he had once before been. Accordingly, on the 10th of July, a frigate was placed at his disposal, on which he embarked with his family, relations, harem, and attendants, to the number of about a hundred persons, and all his personal property, amounting to five million francs. He landed at Naples on the 3rd of August, and proceeded to take up his residence there as a private individual. Thus ended the reign of Hussein Pacha, much to his personal comfort, if he knew how to appreciate it. It is not every one who knows when he is "well off;" but if Hussein were of that number, he must have felt that to live a free life at Naples, was far less miserable than to be shut up in the Kasba for ten years, (as he had been,) for fear of the scymitars and bowstrings of his own soldiers.

A few days after the departure of the Dey, those Turks who were not maimed took their departure from Algiers, to the number of about fifteen hundred. They were each supplied with a small sum of money, and were conveyed, at their own request, to the coast of Asia Minor. Those who remained behind were disarmed, but no other constraint was put upon them; and Algiers began to assume something like a quiet aspect.

Before the Dey took his departure, he had an interview with General Bourmont, and, after thanking him for his lenity, gave him some advice concerning his future dealings

with the inhabitants. He said, "Get rid of the Turkish janisaries as soon as you can:—accustomed to command as masters, they will never consent to be in subordination. The Moors are timid; you will govern them without difficulty; but do not place entire confidence in what they promise. The Jews who are established in this regency are still more knavish and corrupt than those of Constantinople. Employ them, because they are clever in matters of trade and commerce, but never lose sight of them; always hold the blade suspended over their heads. As to the Arabs, they are not to be feared; good treatment will render them docile and faithful. Persecution would deprive you of them presently; they would depart with their property, and carry their industry to the mountains, and even to Biledulgerid, or else they would pass into the states of Tunis. As for the ferocious Berbers, they never loved foreigners, and detest to have them among them. Avoid a general war with this warlike and numerous people; you would draw no advantage from it; but follow towards them the system always followed by the Deys of Algiers; that is to say, throw dissension among them, and profit by their quarrels." The French afterwards found there was much policy in these remarks.

General Bourmont proceeded to form a Commission of Government for the city, composed of some French officers, and a municipal council, composed of Moors and Jews. All was done that seemed likely to produce unity among the various classes of inhabitants, by making courts of justice that would give equal laws to all. But many difficulties were thrown in the way of these attempts. Few people are more prejudiced in their adherence to old customs than the Mahometans; and when they found their old institutions overturned, bad though they were, they were very dissatisfied.

We must now cease to follow in detail the measures pursued by the French. Algiers had become, however insecurely, a French colony, and as such we cannot detail the repeated contests which ensued between them and the roving tribes. The army was indeed surrounded by difficulties of no ordinary kind. Not only were the native tribes ill-disposed towards them, but the government at home was very much perplexed to know whether to retain Algiers or not. Foreign powers were making many objections to the establishment of a French colony on the south shore of the Mediterranean; while the expense of keeping up a considerable army was found to be very great. It was, however, determined to retain Algiers as a colony.

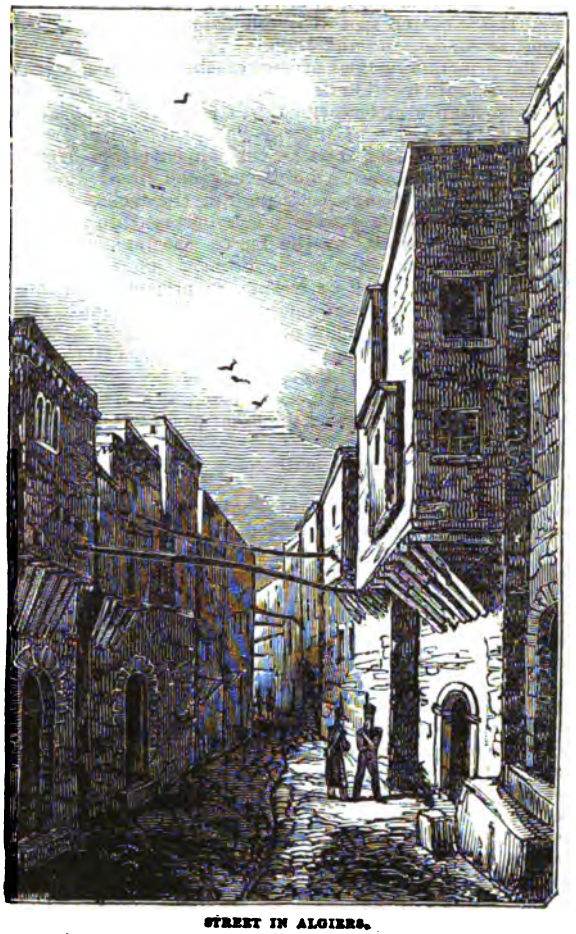
The army, in succeeding years took and occupied the principal towns; and many emigrants have gone out from France, to introduce European customs and industry there. Attempts have been made to cultivate cotton, sugar, and many other articles which it was hoped would ultimately repay the mother-country for the expense which the establishment of the colony has entailed; for after the treasure found in the Kasba was once received, no farther income, except to a trifling amount, was to be expected from Algiers. We regret, however, to add, that the natives have again risen up against their invaders; have massacred many of the French colonists and totally destroyed the farm-houses and cultivated grounds, so that the only place of security is within the walls of the fortified towns.

In concluding this historical sketch, we shall merely add, that we should much regret if political reasons should lead to an abandonment of a colony which has already had the effect of putting a stop to that inhuman system of piracy which rendered Algiers the terror of European shipping. The large amount of scientific and valuable knowledge possessed by the French would produce happy results if brought to bear upon the hitherto ungenial soil of Northern Africa.

4. DESCRIPTION OF THE ALGERINE CITIES AND TOWNS.

We shall now direct the reader's attention to the nature and arrangement of the principal towns forming the Regency; and shall begin with that which is, in every respect the principal, viz., the city of

Algiers. Joseph Pitts, who visited Algiers a hundred and forty years ago, says,—"The tops of the houses are all over white, being flat and covered with lime and sand as floors. The upper part of the town is not so broad as the lower part, and therefore at sea it looks just like the top-sail of a ship. It is a very strong place, and well fortified with castles and guns. There are seven castles without the walls, and two tiers of guns in most of them. But in the greatest castle, which is on the mole without the gate, there are three tiers of guns, many of them of an extraordinary length, carrying fifty, sixty, yea eighty pound shot. Besides all these castles, there is at the higher end of the town, within the walls, another castle, with many guns. And moreover, on many places towards the sea, are great guns planted. Algiers is well walled and surrounded with a great trench. It hath five gates, and some of these have two, some three, other gates within them, and some of them plated all over with thick iron. So that it is made strong and convenient for being what it is, a nest of pirates."



STREET IN ALGIERS.

Dr. Shaw, Pinati, Mr. Salamé, and other travellers, have described the situation of Algiers at different periods within the last hundred years. But these we shall pass over, and describe the town just as the scientific and literary members of the late French expedition found it in 1830.

Algiers is built on the side of a hill, sloping down to the sea. It is triangular in shape, its base being on the shore, and its apex coinciding with the summit of the hill, which rises to a height of 400 feet. On this summit is placed the *Kasba*, which served at once as a fort to command the city, as the palace of the Dey, and as the storehouse in which he kept his merchandise; for the Dey, like most barbarous princes, had reserved to himself the monopoly of certain necessary articles; and as he fixed the price at which he bought, as well as that at which he sold, there is not a doubt that he was a flourishing shopkeeper.

The houses of Algiers have no roofs but all have white-washed terraces; and as this white-wash is also applied to the outsides of the houses, the forts, the batteries, and the walls that surround the city, it looks, from a certain distance, like a vast chalk quarry opened on the side of a mountain. Towards the sea, the city is defended by a line of forts and batteries, connected with the main-land by a mole of masonry. On this side, Algiers is entered by the Marine Gate, which opens on the mole. This gate, covered by a circular arch, is adorned with rude figures: and under the arch is a custom house and a guard, which used to contain several instruments of barbarous punishment. Passing through the gate we enter the best street in Algiers, which is not more than ten feet wide; and as most of the

houses jut out at the first story, and are supported below by beams, the street is reduced so narrow, that a loaded mule seems almost to fill it up.

The streets are generally very crooked. The city is well supplied with water, by means of fountains; or, when these are wanting, by large earthen jars fixed in an excavation of the wall, and constantly replenished. There are also excavations attached to each house for the reception of dirt, which is daily removed by scavengers. The houses are generally of a rectangular form, with four walls, raised to the height of three stories. The ground floor is used as stables, store-houses, slaves' apartments, &c. The hall door is reached by a flight of steps, and immediately after passing it you enter the vestibule, or principal apartment. This is a square room, two sides of which have stone benches, adorned by a row of pillars of white marble, finished at top by Moorish arches, sculptured, and forming little arcades, beneath which the master sits smoking his pipe, while engaged either on business or with visitors. As soon as a visitor enters, he is seated on a mat or tapestry, and coffee and a pipe are brought to him by a slave. Up stairs are the women's apartments, over which is the terrace, where they take the air after sunset, at which time men are forbidden to set foot on it. This description applies to the houses of the wealthy and influential Algerines.

The principal mosque at Algiers is situated at the entrance of the street leading from the Marine Gate. It is a long rectangular building, vaulted, divided longitudinally into three aisles by two rows of pillars; and beneath the dome are two other rows crossing the first at right angles. At each side of the principal aisle the pillars support galleries, of which those nearest to the door are open to the public, but those beyond the dome and on each side of the recess, are reserved for the nobility. Five or six crystal lustres and several lamps are suspended by chains along the grand aisle, and between the two rows of pillars which intersect between the dome. The lamps are lighted for evening prayer, but the lustres are only used on grand ceremonies, such as the feast of *Beyram*. The ceremonies on the occasion of this feast are as follow, or rather *were*, before the Dey was dethroned by the French. On the first day of the feast, as soon as the Imams had announced to the Dey that they had seen the moon, he repaired, accompanied by his ministers, principal officers, and a numerous guard, to the mosque, where he remained during the performance of service. Returning to the palace, he placed himself on his throne, and then the Khazan-Hadgi, as prime minister, kissed his hand; and all the others did the same in succession. The European Consuls, who were admitted directly after the ministers, came also to pay their respects to the Dey, and to kiss his hand. After the consuls came the chief men of the city, the chief of the Jews, and the wardens of the different trades. Those who had been allowed to kiss hands arranged themselves in galleries round the court to witness several sports and exhibitions that ensued.

The Deys used formerly to inhabit a palace near the seashore; but it was so defenceless, that if the janisaries thought proper to murder the Dey and elect a new one, they had little difficulty in so doing. This became such a practice, that a Dey was hardly ever known to die quietly in his bed; and on one occasion five Deys were elected and murdered in the course of *twelve hours* through the strife of rival parties. Ali Pacha, the Dey whom Lord Exmouth found at Algiers, thinking such a system anything but pleasant, resolved to remove to the *Kasba*, or fort; he therefore caused several cannon to be transported from the marine fort to the Kasba. When this was done, he changed his ministers and all the superior officers of government, issued an order that all Turks should be in their barracks at six o'clock on a particular evening, and threatened with death those who should be found in the streets after that hour. Around his person he had thirty Turks entirely devoted to his interest. On the appointed evening, towards midnight, fifty mules prepared by his order, and escorted by his guard, conveyed all his treasures in eight journeys. When assured that this was done, he ordered his flag to be struck, and set out accompanied by his family and all his household, preceded by music. No one knew what was going on, and the order to kill every one found in the street after six o'clock having awed the turbulent, he proceeded to the Kasba in safety. When he had entered, and had caused the gates to be locked, he said to those who surrounded him, "*Now I am Dey!*" The next day he caused it to be proclaimed through the whole city that he had settled himself at the Kasba, and that all who wanted him must go thither. The janisaries by no means relished this mode of curtailing their power; so they revolted next day, and resolved to attack the Dey in the Kasba. But he was prepared to meet them and had adopted such precautions as secured their defeat:—in short he attained that object which had been denied to so many Deys—he died a natural death. But such was the fear that the janisaries inspired, that his successor, Hussein Pacha, never quitted the Kasba for *ten years*, for fear of them; but he was, as we have already seen, afterwards liberated from his thraldom, and dethroned from his office, by the French.

The Kasba presents from a distance a white shapeless mass, which could not be recognised as a fortress but for the enormous cannon which are pointing from its embrasures. The gate, finished by a circular arch, is sufficiently high to admit a man on horseback; it is constructed of white marble, sculptured, and an Arabian inscription is placed at the top.

The eating-houses of Algiers are not very tempting. In a little back shop, at the door of which is constructed a sort of fireplace with three narrow compartments, are placed two dirty Moors, who cut up, on a board, meat into morsels about the size of dice; when the meat is cut, they fix the pieces on little iron spits, several of which they place over the fire. When the pieces of meat are broiled, the cook unspits them on a little plate, throws over them, with a dirty hand, some salt and minced herbs, and sends them to the customers, who are squatted in a corner of the shop. But some do not take a seat at this "humble board;" they merely pay their money as they pass the shop, and hold out their hands, into which the cook empties one or more pieces of meat, according to the sum he has received. It is generally the Bedouins who visit these wretched places.

There are sixty or seventy coffee-houses in Algiers, of which only about four or five merit particular attention. The most remarkable is situated not far from the mosque. It consists of many long straight galleries, supported by small marble columns, and furnished on two sides with stone benches. In a small square room there spouts up a beautiful and refreshing fountain. The kitchen or laboratory is in the middle of one of the galleries, and is furnished with a furnace, boiler, and sundry vessels for the coffee. Into this house Turks and Moors of the wealthier class used to come, and seat themselves gravely on the benches. A boy would then bring them a bit of lighted charcoal, to kindle their pipes, and a little cup of coffee without sugar. M. Rozet gives the Algerine coffee the character of being weak and badly made, *like the English*. The better kind of coffee-houses are attended during the afternoon and evening by musicians, who play upon a sort of guitar, and make all sorts of grimaces and contortions. The Moors and Turks sometimes go into a coffee house at ten in the forenoon, and remain there nearly all day, drinking and smoking.

Barbers' shops are in most countries famous places of resort for idlers, gossippers, and politicians of a humble class. These shops are, in Algiers, about four or five yards long, and two or three wide, with a bench all round for customers to sit upon, and the various implements of the barber hanging against the wall, together with a few wretched pictures of the triumphs of the corsairs, &c.

There are bazaars in Algiers, which are formed somewhat differently from those of Eastern countries. They are large houses with galleries, on each side of which are small chambers independent of one another, and capable of being locked. Each bazaar has two or three floors, and as many rooms as there is space for. Before the French took Algiers, if a foreign merchant obtained leave to settle in the city, he went and hired a stall or shop in one of the bazaars, where he exposed his goods, for the shops in the streets are generally too mean to serve for a reputable trader.

Most of the Arabs and Berbers who have business to transact in Algiers, very unceremoniously sleep in the middle of the streets, with their horses; but some pay a trifle for the use of a kind of lodging-house, called a *fonduc*. Such a building consists of a court-yard surrounded by little cells or apartments, in which the Bedouins and their horses sleep. At the back of the gallery which runs round the court are several pots or vessels placed over three stones, with a space between them containing a fire. These pots are the kitchens of the Bedouins, in which they perform their cooking.

The baths of Algiers partake much of the luxury which

distiuguishes those of Turkey and Persia; indeed the routine of bathing is so very similar, that we do not think it necessary to describe that which has been so often described.

The state of Algiers as we have thus detailed it, is such as it appeared about the time that the French took possession of it. It may be interesting to see what a later traveller, and of a different nation, says about Algiers since it has changed its masters. Sir Grenville Temple visited Algiers in 1835, and thus describes it:—

"About half way between the two sea-gates, the French have lately cleared away an extensive piece of ground which is called *Place du Gouvernement*, and which is to be faced with public offices and other edifices, built according to European models; the erection of a church and of a theatre has also been ordered. Many of the Moorish houses are of very large dimensions, and possess in their interior great beauty of architecture. The mosques, mesjids, and chapels are numerous, but exteriorly have no claims whatever to our admiration; what they may be within, I had not the power of ascertaining, as the French government have strictly prohibited Christians from crossing their thresholds; but flat roofs, and ugly square towers, like those of our English churches, are but poor substitutes for the swelling bronze domes, and graceful lofty minarets, which at Stamboul and Kahira, rise in beauty at every step before the admiring eye. The principal mosque was pulled down by the French to make room for the new square, and another in the Rue du Divan was shortly to be consecrated to Christian worship. All the houses are numbered, and the streets have received names the medley of which is curious; for we read, Rue Annibal, Orleans, Sophonisba, du Chat, Belisaire, Trois Couleurs, Barbarossa, Sidney Smith, Numides, la Charte, Lotophages, Etat Major, &c.

"Algiers is daily assuming a more European aspect; hats are nearly as often seen as turbans, cigars have replaced the long pipes, and the Moorish bazaars give way to the glazed windows of French shops. Upwards of fifty mer chants have established counting-houses, and a considerable number of mechanics and tradesmen, including of course a full proportion of modistes, couturières, and perruquiers, are thickly scattered about. Eleven grand cafés with billiard tables, four grand hotels, (which are, however, execrable,) three restaurateurs, one hundred eating-houses, two *cabinets litteraires*, one circus, a cosmorama, &c., have already been established, and cabriolets and omnibuses were shortly to ply from the Bab-hazoon to Mustafa Pacha, and from Bab-el-Haout to the Dey's country villa. The Kazbah (Kasba) is a little town itself, containing the late Dey's palace, and several other houses and gardens; the palace has suffered much from the French soldiery, who, on first occupying it, pulled up the pavement, tore down the glazed tile coating of the rooms, and otherwise committed great injury in their eager search after treasure. The marble flooring, the arched galleries, supported by marble pillars of fantastic but graceful forms, which surrounded the open courts, the elegant fountains which scattered coolness around, and the latticed shahne-sheens, still, however, remain to repay the fatigue and trouble of the visitor's ascent. The *corps de garde*, with the gate, and the sycamores, banana-trees, and vines which surround it, together with the mixture of French uniforms and Moorish costumes, formed altogether a beautiful little picture; as did also a wine-shop, shaded by a vine-covered *pergola*, under which were seated groups of soldiers."

On the general question of the occupation of Algiers by the French, Sismondi makes the following remarks, more in a social than in a political point of view:—

"Africa has especial need of the services of men, whose thoughts are directed to the benefits of industrious exertion, and who can secure its application. She will give a preference to those who know how to create new resources, and to improve the old ones,—to such as can accommodate themselves to a connexion with a people in a state of barbarism, and communicate the first elements of civilization,—who can give and secure the administration of public order;—in fine, those who will bring with them the arts, trade, and industry, necessary for the developement and progress of science, and the advancement of civilization; the whereon and the wherewith to work will be found in the country. If the French arrive as friends, protectors, and liberators, aiding and not oppressing the Moors; if they give them security, equality in the eye of the law, a respect for the life and happiness of all bearing the human form, —they will find these people in return the same industrious labourers, patient, intelligent, and active, who covered the lands of Grenada and Valencia with the wonders of Moorish agriculture;—they will find in the Jews, (of whom there are more than 50,000 in the kingdom,) that aptitude for commerce, that quickness of calculation, that knowledge of the markets of Africa, that will make them clever agents, quick in commercial enterprise, active hawkers and retailers, for communication with the barbarous tribes of the desert, or the oppressed people of Morocco and Tunis."

These were the words of a writer who was anxious that his countrymen should take possession of Algiers. We must, however, join in the remark of an English journalist, that "We have nothing to do with the political question involved in the French occupation of Algiers; but as philanthropists we may be allowed to say, that if, as a consequence, civilization shall extend among the savage hordes of Africa, the French will deserve the gratitude of the human race, upon whom they have already conferred an immense benefit, by the destruction of a nest of pirates which the jealousies of the maritime governments of Europe suffered to exist, during so many ages, upon the confines of the Christian world."

Reserving for a future Supplement a description of some other towns in the regency of Algiers, and also the filling up of the fifth and sixth sections of our subject, we will conclude the present paper with the following anecdotes of past and present times.

In 1635, a romantic adventure occurred. Four young Frenchmen, brothers, undertook to retort the piracies of the Algerines, with *a frigate of ten guns*. In this Quixotic undertaking a hundred volunteers embarked: a Maltese commission was procured, together with an able master, and thirty-six mariners. They had the good fortune on their first setting out, to take a ship laden with wine on the Spanish coast; with which they were so much elated, that three days afterwards they madly encountered two large Algerine corsairs, both well manned and ably commanded. These vessels attacked the frigate so furiously that she soon lost her main-mast; notwithstanding which, the French made so desperate a resistance, that the pirates were not able to take them, till the noise of their fire brought up five more Algerine vessels, by which the French vessel was boarded and taken. The young knights-errant were punished for their temerity by a dreadful captivity of seven years, from which they did not escape but at a ransom of 6000 dollars.

Sometimes the Algerines attacked ships able to repel them; but more frequently they were able to make the crews prisoners, and even to land on the coasts of Spain, France, and Italy, removing from thence immense numbers of the inhabitants, who were sold as slaves. In 1683, Du Quesne, a chivalrous French nobleman, determined to punish their atrocious piracies, bombarded Algiers for three days, and produced such terrible devastation, that the Dey sued for peace, and offered to deliver up all the French who were then prisoners at Algiers. This was accepted, with an additional proviso, that Mezomorto, the Algerinic admiral, should be given up as a hostage for the faithful performance of the treaty. This so exasperated the admiral, that when the douwan, or senate, sat to deliberate on that proviso, he broke out into a violent passion, and told the assembly that the cowardice of those who governed, had occasioned the ruin of Algiers; but that for his part, he would never consent to deliver up anything which had been taken from the French. He immediately acquainted the soldiery with what had passed; which so exasperated them, that they murdered the Dey that very night, and next day chose Mezomorto in his place. The new Dey broke up the negociation for peace; and Du Quesne continued to bombard the city. Mezomorto, unmoved at the state to which it was reduced, and the vast number of the slain, whose blood ran in rivulets along the streets,—or rather, growing furious and desperate, sought only revenge; and not content with causing all the French in the city to be cruelly murdered, ordered their consul to be tied hand and foot, and fastened alive to the mouth of a mortar, whence he was shot away. By this piece of inhumanity Du Quesne was so exasperated, that he did not leave Algiers, till he had utterly destroyed their fortifications, shipping, and three-fourths of the whole city, by which it became a heap of ruins. The Algerines were at length compelled to sue for mercy.

Soon after Marshal Bourmont found himself in possession of Algiers, he directed his attention to other parts of the regency, with the view of gradually getting them to ac-

knowledge the French as masters. The Bey of Titerie sent in his submission, and was reinstated in his government, as an officer under French authority. An express was then sent to the Bey of Oran, with the same request. He excused himself from the charge of government under the French, on account of his advanced age, but readily gave the required submission, and agreed that a French garrison should enter Oran. The town of Bona, which had been often harassed by attacks of the Berbers, solicited the protection of the French. A detachment was therefore sent thither, which was well received by the inhabitants.

The Bey of Titerie came to do homage to Bourmont, and requested him to pay a visit to Belida, a town about eight leagues distant from Algiers, and which he wished to attach to his government. But other considerations induced the general to appoint an Aga as governor of the place. This dissatisfied the Bey of Titerie, and also the Berbers; but as General Bourmont wished to visit the town, he set out with a force of 1500 men and several officers. The troops expected to have only a pleasant, though rather long march; and though they saw numerous groups of Arabs, they met with no interruption, and proceeded first across a dreary plain, and afterwards through a fertile country, till they arrived at Belida. They were received kindly by the inhabitants, and slept them in safety that night. The next day the new Aga was installed into his office, and all seemed going on well, until towards evening, when large troops of Berbers were seen approaching the town. At eleven o'clock some shots were heard near the house where the general was quartered, and an aide-de-camp who went out to see what was the matter, was instantly shot. It was now seen that vigorous defensive measures were necessary. The troops were ordered to march back to Algiers, without wasting time in following the roving hordes. During their homeward march they were harassed with clouds of Berbers, who attacked them with the greatest audacity, and did not desist until the French had re-entered Algiers. The Berbers then returned to Belida, and pillaged the town, in revenge for the kind reception which the Moors and Jews had given to the French.

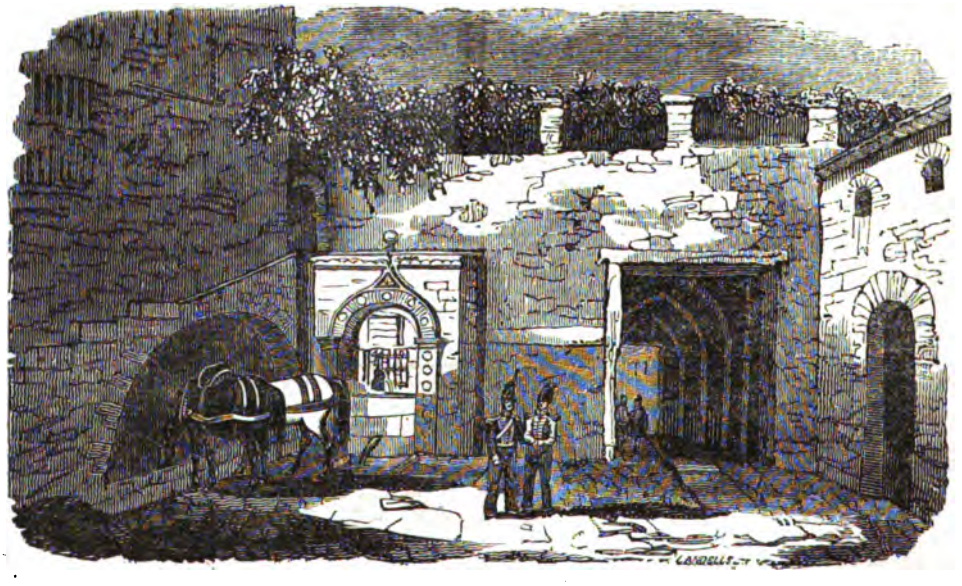
Thus ended an adventure which opened the eyes of the French to the dangers and difficulties of their situation. Had they to do with troops who observed anything like order or system in their attacks, the known courage and hardihood of the French would have made them equal to their task; but to conquer men who can gallop across a desert in every direction as soon as they meet with a defeat, is almost an impossibility.

This retreat of the French from Belida had an unfortunate effect, in showing that they were not invincible. From that day the Arabs and Berbers approached Algiers, and committed all sorts of ravages upon the cultivators of the suburbs. Within the city, also, the good feeling which it was supposed had been established, changed: Jews thought the Turks were treated too well, and Turks thought that both Moors and Jews were unduly favoured. In short, almost the whole population of the city, headed and encouraged without by the Bey of Titerie, who now threw off the mask, turned against the French, and it was by chance that a plot was discovered, for massacreing every French man in the place. Severe measures were taken, productive of a partial good effect; but by the end of July, doubt, anxiety, and disease had lowered the enthusiasm of the French, both men and officers, very considerably. The dysentery had carried off more than two thousand men.

On the 11th of August a corvette appeared in the bay, bearing the news of the French revolution of 1830. The general and his officers, in addition to their other troubles, were now much embarrassed to know what part to take in the new order of things; but on the 2nd September, Marshal Clausel arrived, with the information that he was appointed to fill the station occupied by Bourmont, and that Louis Philippe had been made king. Bourmont gave up his command, but declined to return to France, preferring to go to some other country as a private individual.

The French found it necessary to relinquish Oran and Bona, and confine themselves wholly within the city: indeed they may almost be said to have been imprisoned there by the Arabs, who massacred every soldier who ventured far from the city.

Marshal Clausel afterwards undertook an expedition to Medeya, a town situated in the little Atlas mountains, for the purpose of planning the establishment of a model farm, which should be the nucleus from whence a system of profitable cultivation might spread out. His attempt was tolerably successful; but he had on his return the same sort of evidence which General Bourmont had received, of the warlike and hostile disposition of the Arabs and Berbers. It required all his skill and resolution to prevent his men from falling a sacrifice to the incessant attacks of the Arabs.



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WESTMACOTT'S MONUMENT TO WICLIF, IN LUTTERWORTH CHURCH.

WICLIF.

"THE very names of Wiclif, Lord Cobham, Huss, &c." says Gilpin, "will not only awaken sentiments of gratitude and veneration in every ingenuous heart, but will likewise excite a laudable desire of being particularly acquainted with the lives and characters of those eminent worthies who, in times of peculiar danger and difficulty, nobly dared to oppose the tyrannical usurpation, and barbarous superstition of the Church of Rome, and sacrificed every valuable consideration on earth to the cause of truth and liberty. Wiclif was in religion what Bacon afterwards was in science, the great detector of those arts and glosses which the barbarism of ages had drawn together to obscure the mind of man."

A short memoir of the great man whose name occurs first and foremost in the above passage, will doubtless be acceptable to the readers of the *Saturday Magazine*. We therefore present it, in illustration of the beautiful piece of sculpture, an outline copy of which appears at the head of this paper; the original bas-relief, the work of Mr. Richard Westmacott, jun., having been placed in the parish-church of Lutterworth, Leicestershire.

John Wiclif, called the morning-star of the Reformation, was born about the year 1324, near Richmond, in Yorkshire. Of his childhood, nothing is certainly known; but we learn that when only sixteen he was admitted commoner of Queen's College, Oxford. He soon afterwards removed to Merton College, where he was first probationer, and afterwards fellow. He was soon regarded as a person of profound knowledge. The study of the Holy Scriptures, however, afforded him the most delight. He wrote notes, and expositions, and homilies on several parts of them; and thence acquired the title of the Evangelical, or Gospel Doctor. In 1360 he distinguished himself by his wise and vigorous opposition to the encroachments of the begging friars, whose order had been introduced into England in 1221, and who had now increased to an extravagant number. In exposing the "hypocrisie, covetise, simonie, blasphemie, and other leasings" of this mendicant fraternity, it is no wonder that Wiclif heaped up for himself a formidable accumulation of wrath: but this was of little importance to a champion successfully engaged in one of the most momentous contests recorded in the history of the Church.

In 1361 he was advanced to the Mastership of Baliol College, Oxford, and four years afterwards to the wardenship of Canterbury Hall, which had been then recently founded by Archbishop Islip. He was, however, in 1370 expelled from the latter situation by a bull from the pope, who also imposed silence upon him and on certain secular clerks, who had also been ejected.

We now arrive at a most important event, not only as it relates to Wiclif, but to the Church of England. Pope Urban the Fifth had given notice to the king (Edward the Third), that he intended by process to cite him to his court, then at Avignon, to answer for his default in not performing the homage which King John acknowledged to the see of Rome, for his realm of England and Ireland; and for refusing to pay the tribute granted to that see. Such claim the king had determined to resist, and the parliament had approved the determination, when an anonymous monk had the effrontery to vindicate the Pope, and insist on the equity of his claim. In opposition to that writer, and in defence of England against popish usurpation, Wiclif presented himself as a zealous, able, and successful antagonist.

In 1372, having taken his degree of Doctor of Divinity, and become Theological Professor in the University of Oxford, Wiclif publicly read lectures on theology, and again directed his attention to the exposition of the abuses which had at that period crept into the Church.

In 1374 Wiclif was sent by the king, with other ambassadors, to treat with the pope, and to protest against the improper disposal of English benefices on Italians, Frenchmen, and other aliens, ignorant of our language. In the course of this treaty, which lasted for two years, Wiclif was made more sensible than ever of the pride, covetousness, and ambition of the pope. He wrote against the doctrine of indulgences, and, by his zealous opposition to the Church of Rome, encountered no small share of obloquy and annoyance. He had now been appointed Prebendary of Aust; and in 1376 the king presented him with the rectory of Lutterworth, in Leicestershire.

The time having arrived for a violent attack to be made on Wiclif, by enemies who had long been watching for an opportunity to gratify their revenge, a citation was issued, commanding him to appear before the convocation at St. Paul's on the 19th February, 1377. On the appointed day Wiclif, accompanied by his friend and patron, John of Gaunt, duke of Lancaster, and Henry Piercy, earl-marshal, attended at St. Paul's, when, in consequence of a quarrel between the bishop of London and the earl-marshal, which led to a dreadful riot out of doors, the court broke up without adopting any measures.

In June, 1378, the papal delegates sat again, having assembled at Lambeth, for the execution of their commission, when the queen-mother, widow of the Black Prince, sent for Sir Lewis Clifford, to forbid them to proceed to any definitive sentence against Wiclif. At that meeting Wiclif attended, and delivered an able and interesting paper, in which he assigned reasons for the statements he had made, and for which he had been cited; but his explanations being unsatisfactory to the delegates, they commanded him no more to repeat such propositions, either in the schools or in his sermons. By the death of Pope Gregory XI. in this year, an end was put to the commission of the delegates, and Wiclif appeared before them no more. About this time he published his book on the Truth of the Scriptures, and in 1379, in consequence of the fatigues he had endured, he was seized with an alarming illness, and appeared to be at the point of death. From that attack, however, he recovered, to the inexpressible joy of the Reformed Church.

In 1380, in his lectures, sermons, and writings, Wiclif exposed the Romish court and clergy. At the same period he was engaged, with other pious and learned men, in translating the Holy Scriptures into English. This translation was bitterly assailed, but it was ably defended by Wiclif, who also firmly maintained and upheld the right of the people to read the Scriptures. In this and the following year he ably opposed the popish doctrine of transubstantiation. This opposition excited the malice of his enemies, and he was censured by the Chancellor of Oxford, and some doctors of the University. Wiclif appealed from this decree of the chancellor to the king. Archbishop Sudbury, about this time, being beheaded by the rebels, William Courtenay, bishop of London, was translated to the see of Canterbury, by the pope's bull, and, in 1382, in a court of certain select bishops, condemned several of the opinions of Wiclif, as pernicious, heretical, and repugnant to the doctrines of the Church.

In addition to these, and other strong measures, Courtenay obtained letters-patent from the king, directing that Wiclif, with other excellent men, should

be expelled from the University of Oxford, and ordered that his publications should be everywhere seized and destroyed. Thus persecuted, and overcome by force, he was at length obliged to quit his professor's office, and retire to Lutterworth; where, however, he still continued his studies, and endeavoured to promote the reformation of those corruptions which he was convinced were everywhere prevalent, through the glosses and unscriptural assumptions of the Romish Church.

Soon after his removal to Lutterworth, he was seized with a fit of the palsy, of which he soon recovered, being again able to perform the pastoral functions of his parish, and to undergo those severe labours which his sense of duty, in trying times, had imposed upon him. Still hunted by his enemies, he was cited to appear before Pope Urban, but he returned a letter of excuse, and did not attend. Though his health had now begun gradually to decline, he preached the word of God, in season and out of season; till at length, on Innocent's day, 1384, he was attacked with another fit of the palsy, while performing the service in Lutterworth church. In this state he remained two days; and was finally taken to his rest on the last day of the year, and in the sixty-first year of his age *.

Wiclif had well studied all the branches of theological learning,—was deeply skilled in the ecclesiastical and civil law;—was grave, yet cheerful, and, above all things, loved God with all his heart, and his neighbour as himself. His writings were numerous and learned, and assisted greatly in bringing about the establishment of our Reformed Church, which is the true instructress of the people in pure and undefiled Christianity, and on the principles of which our Constitution, in Church and State, are founded. May those principles ever be respected!

* Admirable, that a hare so often hunted, with so many packs of dogs, should die at last quietly sitting in his form!—Fuller.

INSCRIPTION UNDER AN HOUR-GLASS, IN A GROTTO NEAR THE WATER.

This babbling stream not uninstructive flows,
Nor idly loiters to its destined main;
Each flower it feeds that on its margin grows,
And bids thee blush, whose days are spent in vain.

Nor void of moral, though unheeded, glides
Time's current, stealing on with silent haste;
For, lo! each falling sand his folly chides,
Who lets one precious moment run to waste.

EPITAPH ON THOMSON,
Author of *The Seasons*.

Others to marble may their glory owe,
And boast those honours sculpture can bestow:
Short-lived renown! that every moment must
Sink with its emblem, and consume to dust.
But Thomson needs no artist to engrave,
From dumb oblivion no device to save;
Such vulgar aid let names inferior ask,
Nature for him assumes herself the task;
The Seasons are his monuments of fame,
With them to flourish, as from them it came.

We behold with admiration the vivid azure of the vaulted sky, and variegated colours of the distant clouds; but, if we approach them on the summit of some lofty mountain, we discover that the beauteous scene is all illusion, and find ourselves involved only in a dreary fog, or a tempestuous whirlwind; just so, in youth, we look up with pleasing expectation to the pleasures and honours which we fondly imagine will attend maturer age; at which, if we arrive, the brilliant prospect vanishes in disappointment, and we meet with nothing more than a dull inactivity or turbulent contentions.—Soame Jenyns.

A DISCOURSE ON GEOLOGY.

II.

Heat of the Globe.

The solar rays are the principal source of heat on the surface of the globe, the temperature varying in relation to the amount of these rays, and consequently decreasing from the equator to the poles. The temperature also varies with day and night, and with the seasons of the year. At a certain depth below the surface, nowhere exceeding one hundred feet, these variations become insensible, and the temperature is constant, or fixed, being nearly the same as the mean temperature at the surface.

If from this point of equable temperature, we find a gradual *decrease* of heat as we dig deep into the earth, we must necessarily conclude that the interior parts are colder than the surface, and that there is no reason to imagine the earth to have any other heat than that derived from the solar rays. But if, on the contrary, it be found that as we descend into the earth, an *increase* of temperature occurs, we cannot but admit that the earth has a proper or inherent temperature derived from internal sources. Experiment proves the latter to be the case.

These trials to determine the internal heat of the earth have been made at various depths, and under different circumstances—in artesian wells, salt pits, coal-works, and mines of different metals; and it appears to be fully ascertained, that in situations far removed from volcanic action, and in different kinds of strata, water, air, and rocks continually grow warmer as we descend in the earth. Without a single exception, the interior of the globe has been found to be warmer than the surface; and the heat augments constantly with the depth; the mean or average increase, being one degree of Fahrenheit in forty-five English feet. Indeed, the heat in some deep mines becomes so oppressive, that the miners can with difficulty pursue their labours.

Such being the case, it will be evident, if the same ratio of increase continue, that the heat at considerable depths in the interior of the earth must be most intense, acting as the mighty counteracting cause before alluded to, which prevents the compression of the materials in the interior of the earth. The notion of an incandescent mass in the interior of the earth is startling to many, and not without discomfort to some; but so far from finding in this any cause of alarm, a further consideration of the subject will declare to us that the preservation of the world in its existing state is probably dependent on this powerful agent.

Thus, in thy world external, Mighty Mind,
Not that alone which solaces and shines,
The rough and gloomy too demands our praise.
The winter is as needful as the spring;
The thunder as the sun.

The temperature at the surface is, as has already been observed, dependent on solar radiation; and the rocks in the upper strata of the earth are such bad conductors of heat, that no sensible effect appears to be produced at the surface by this internal heat. It may, and probably has sufficient influence, to prevent the refrigeration or cooling of the earth beyond the present temperature at the surface, and thus may act its part in adapting the earth for the present races of organized beings. But we must remember that this intensely heated mass in the interior of the globe is no new condition of things, but that if it exist, it must have existed for many centuries, probably from the era of man's creation. For it appears, there is no reason to conclude that any change has taken

place in the climates of the earth since the earliest historical records; and astronomy informs us that the general temperature of the mass of the globe has not varied one-tenth part of a degree for the last two thousand years. This is proved by calculations of the moon's motion. All solid rocks, except clay, expand when heated, and were the heat of the globe increased, its diameter would be augmented and its motion retarded. If, on the other hand, the heat of the globe were diminished, this motion would be accelerated; and thus we may be led to the conclusion that so far from being an element of destruction, the very continuation of the earth in its present state may be dependent on this intensely heated mass, ordained for this purpose by an all-preserving God.

It is, however, supposed that the internal temperature of the earth may have been considerably greater in ancient geological eras; and that by the greater heat thus at those periods communicated to the surface, even the frozen regions of the present day may have been capable of sustaining races of organic beings, found in those parts in a fossil state, but whose modern representatives only inhabit the hottest regions of the globe.

GENERAL ARRANGEMENT OF STRATA.

On examining into the structure of the earth's crust, (as that small portion of the exterior of the globe accessible to man's observation is termed,) we discover in all parts a series of mineral masses evidently not scattered and mixed at random, but arranged in much order, and frequently spread over areas of considerable extent. And though, in some cases, we find that the original position of these mineral masses has undergone great subsequent disturbance, proofs of the order that once prevailed may be distinctly observed.

The greater part of these mineral masses, which constitute the rocks and beds or strata of the earth, are evidently composed of matter deposited by, or accumulated under water, formed in a manner similar to that which is constantly in progress at the present day, in the beds of rivers, lakes, and in the ocean. In most instances the water carries down sand, clay, and other sedimentary matter, which sinks to the bottom, and banks and shoals are formed. These, at least such as come under our observation, are usually of small extent; whilst the different groups of strata of the ancient world are mostly on a scale of great magnitude. Thus we find masses of limestone several hundred feet in thickness, and in other places vast beds of sand or of clay. An examination of sandstone rocks leaves no doubt that they have experienced the agitation of water; such are called sedimentary deposits. Some limestones yield evidence of similar agitation, but others appear to be *aggregates* or *aggregations* of particles of carbonate of lime, slowly deposited from water holding that substance in solution.

It will be evident that if we find a series of horizontal strata of sedimentary origin, the uppermost bed must be of later formation than those which are beneath; some instances occur, indeed, where by convulsions of extraordinary violence the original position of the strata has been actually reversed; but such instances are rare, though it is by no means uncommon to meet with strata thrown into an inclined position.

These strata are all characterized by their peculiar fossils, the greater part being full of the remains of marine exuviæ, exactly as we might expect to find the bed of the ocean at this day filled with the exuviæ of now existing or lately perished animals. In each system of strata lie entombed the remains of different races of beings, all successively buried in marine or fresh-water sediments, (the latter being of much rarer occurrence,) on the same area or surface, forming "a series of monuments" which mark the numerous changes of organic and inorganic nature.

It appears, therefore, that the greater part of the present continents at some former period existed in a sedimentary form at the bottom of the sea. But to have become so consolidated as they are at present, these formations must have been subjected to some other condition, some other agent must have been at work. This agent is supposed to be subterranean heat, acting upon the various substances of which the rocks are composed, either whilst under the pressure of super-incumbent or overlying rocks, or that of a deep ocean.

These sedimentary rocks, though apparently modified by heat, are evidently of *aqueous* origin, or formed by water; but there is another class of rocks which appear to be of *igneous* origin, or formed by fire, or heat. Among these rocks are granite, trap, lava, &c. All these igneous rocks present the appearance of having been in a state of fusion, and as they all either form the lowest of the series of rocks, or have apparently been ejected from an unknown depth below, in a melted state, as is the case with existing volcanoes, they corroborate the opinion of great central heat.

These various formations occur in all parts of the globe, though they have hitherto been principally studied in Europe and in North America. Great Britain is singularly prolific in an extensive range of geological formations, and it has been prettily said, "As if nature wished to imitate our geological maps, she has placed in the corner of Europe our island, containing an *index series* of European formations in full detail *." Indeed, the series of British strata represent very well the succession of stratified rocks not only in Europe, but also in part of Africa, Asia, and North America, the agreement being very close in those parts which are nearest to the British islands, and being vague and indefinite as the distance increases. The greater number of recognised stratified rocks occur in this island, and though volcanoes are unknown, igneous rocks belonging to the granite and trap formations are met with in some parts; and few districts of such comparatively small area, perhaps, present so complete an assemblage of the successive geological groups. This is a fact of much interest to the British student of geology, who thus may have it in his power to study all these formations in his native land. They do not, however, occur equally in all parts of the island, and should our attention be confined to a limited district, we might very possibly find the number of strata exceedingly limited. It has been amusingly remarked, that, "If a stranger were to land in Cornwall, and, after traversing the whole extent of that county and of North Devon, and crossing over to St. David's, were to make the tour of North Wales, and from thence passing by the Isle of Man, through Cumberland, to the south-western shores of Scotland, should proceed either through the border counties, or along the range of the Grampians to the German Ocean, he would conclude from such a journey of many hundred miles, that Britain was a thinly peopled, sterile region, whose principal inhabitants were miners and mountaineers.

"Another foreigner, arriving on the coast of Devon, and crossing the midland counties, from the mouth

* WHEWELL'S *Anniversary Address*, 1839.

of the Exe to that of the Tyne, would find a succession of fertile hills and valleys, thickly overspread with towns and cities, and in many parts crowded with a manufacturing population, whose industry is maintained by the coal with which the strata of these districts are abundantly interspersed.

"A third foreigner might travel from the coast of Dorset to the coast of Yorkshire, over elevated plains of oolitic limestone, or of chalk, without a single mountain, or mine, or coal-pit, or any important manufactory, and occupied by a population almost exclusively agricultural.

"Let us suppose these three strangers to meet at the termination of their journeys, and to compare their respective observations: how widely different then would be the results to which each would have arrived respecting the actual condition of Great Britain*."

These differences would have arisen from the peculiar geological structure of the different parts of our island. And in a similar manner, the student in geology, if he would become acquainted by personal observation with the various strata, must direct his course with due consideration, and not expect to meet with the whole series in a limited district, but only to accomplish it by extensive and judicious travel and research.

To this arrangement of the strata perhaps the prosperity of Great Britain may in a great measure be attributed, for the three principal sources of national wealth,—mining, manufactures, and agriculture,—are thus combined in the small compass of this island,

> . . . . . which stands
> As Neptune's park ribbed and paled in
> With rocks unscaleable, and roaring waters,
> With sands that will not bear her enemy's boats,
> But suck them to the top-mast.

* Dr. Buckland's *Bridgewater Treatise.*

[Abridged from Zornlin's *Recreations in Geology.*]

If we know ourselves, we shall remember the condescension, benignity, and love, that is due to *inferiors;* the affability, friendship, and kindness, we ought to show to *equals;* the regard, deference, and honour, we owe to *superiors;* and the candour, integrity, and benevolence, we owe to *all.*—Mason.

> When 'mongst yon venerable oaks I rove,
> I own the Deity that fills the grove;
> If the sage tree no voice prophetic gives,
> If in its bark no fabled Dryad lives,
> He gave each towering trunk to rise, He spread
> The waving foliage of each reverend head;
> Known in each leaf unfolding to the Spring,
> Seen in each insect of the meanest wing,
> Found in each herb, each flower that decks the field,
> In every walk conversed with and beheld:
> Blest intercourse! when deigns with man to join
> The all-gracious presence of the Power divine;
> When, great example of primeval grace,
> Man communes with his God as face to face.
>
> Bishop Hurd.

> Home! 'tis the name of all that sweetens life;
> It speaks the warm affection of a wife,
> The lisping babe that prattles on the knee
> In all the playful grace of infancy,
> The spot where fond parental love may trace
> The growing virtues of a blooming race.
> Oh! 'tis a word of more than magic spell,
> Whose sacred power the wanderer best can tell;
> He who, long distant from his native land,
> Feels at her name his eager soul expand;
> Whether as patriot, husband, father, friend,
> To that dear point his thoughts, his wishes bend;
> And still he owns, where'er his footsteps roam,
> Life's choicest blessings centre all, in Home!

THE NATURAL HISTORY OF THE MONTHS.

II.

February.

> .....Then came old February, sitting
> In an old wagon, for he could not ride,
> Drawne of two fishes for the season fitting,
> Which through the flood before did softly slyde
> And swim away; yet had he by his side
> His plough and harnesse fit to till the ground,
> And tooles to prune the trees, before the pride
> Of hasting prime did make them burgeon round
>
> Spenser.

The name of this month is derived from the Roman custom of burning expiatory sacrifices, called *Februalia.* The first day of the month is called in the *Calendarium Naturale,* Primaveralis, or the first day of early Spring. Still, however, the early part of the month belongs to Winter; and although the cold is considerably diminished, and the ice everywhere begins to melt, yet the aspect of nature is gloomy—the trees appear like lifeless skeletons, with none of that fleshy verdure which makes them look so beautiful in Summer—the skies are cold and their aspect is gray—our favourite country walks are miry and uninviting—the air is either damp and foggy or cold and keen—we feel inclined to wonder where the feathered tribe can find a home, and where they can procure their food: let one of Scotland's sweetest poets answer us.

> . . . . . The fowls of heaven,
> Tamed by the cruel season, crowd around
> The winnowing store, and claim the little boon
> Which Providence assigns them. One alone,
> The Redbreast, sacred to the household gods,
> Wisely regardful of the embroiling sky,
> In joyless fields and thorny thickets leaves
> His shivering mates, and pays to trusted man
> His annual visit.—Grahame.

At this time of the year, when the ice and snow are suddenly melted by a thaw, accompanied by a south wind and much rain, great injury is done to the country by torrents of water from the hills, whereby brooks and rivers are swollen beyond the limits of their beds; the ice is broken up with great violence, and, borne along by the flood, is dashed against barges and bridges, sometimes to the destruction of both; the fields are often inundated, trees and embankments, and sometimes cattle, washed away, and, in the course of a few hours, great losses of property are sustained. The thaw is often succeeded by frost and snow, and the alternations from cold to mild weather are frequent.

As the month advances, we observe many harbingers of Spring, both in the animal and vegetable world. The sweet notes of the woodlark are heard, and the raven and the rook begin to repair their nests; geese begin to lay, and the thrush and the chaffinch are already tuning their sweet pipes; the wood-owls are ready with their hoot, and towards night partridges begin to be heard making their well-known harsh noise; the missel, blackbird, wren, and robin are in song, and may be heard, even in frosty weather. In warm days the bees begin to show signs of their active industry, and red butterflies, which have concealed themselves within our houses during winter, sometimes fly about our rooms. On fine days gnats and some other insects commence their sports; the hedge-sparrow chirps his ineffectual song; skylarks sing on sunny mornings, and the field-lark enlivens the stubble-fields with his brilliant notes.

As soon as the earth is softened, (says Aikin,) moles go to work in throwing up their hillocks. Under some of the largest, a little below the surface of the ground, they make their nests of moss, in which four or five young are found at a time. These animals feed on worms, beetles, and the roots of plants. They do much mischief in gardens, by

loosening and devouring flower-roots, and in the fields by rendering the surface of the soil unequal by their hillocks, which obstruct the scythe in mowing. They are also accused of piercing the sides of dams and canals, and letting out the water; the strong muscles of their fore-feet, together with their hand-like form, admirably fit this animal for swimming; and it has lately been observed, that in this way moles pass from the shore to the little islands in some of the Scotch lakes.

The vegetable world now also presents us with a few heralds of the young Spring: many plants rise up, but few flowers are hardy enough to appear. The delicate snowdrop has prepared its modest bell by Candlemas-eve, and sometimes earlier: hence the poetic terms of "our lady of February," "the fair maid of February," and "Purification flower," have been applied to it in Roman Catholic times.

> Already now the snowdrop dares appear,
> The first, pale blossom of the unripened year;
> As Flora's breath, by some transforming power,
> Had changed an icicle into a flower,
> Its name and hue the scentless plant retains,
> And winter lingers in its icy veins.—BARBAULD.

In mild weather an occasional primrose is found flowering on warm banks: but the general time for flowering is a month or two later. Hyacinths flower to their water-glasses, and afford a graceful ornament in our rooms. Mosses and lichens are rich and various, and will reward the close attention of the lover of nature. The green leaves of the daffodil appear: the red primrose, and the yellow Spring crocus; polyanthuses and daisies, occasionally, and in sheltered situations, begin to display their charms: the periwinkle creeps along, bearing its small blue flower: the common pilewort, or lesser celandine, that "prophet of delight and mirth," must not be forgotten, with its little yellow stars, like gems on the wood sides, especially as that true poet of nature, Wordsworth, has written such beautiful lines in its praise. The elder-tree now puts forth its flower-buds; the catkins of the hazel are apparent in the hedges; gooseberry and currant trees put forth young leaves by the end of the month; and the ascent of sap in plants and trees is one of the wonderful preparatives of the scene of vernal life and beauty, of freshness and vitality, which makes Spring the most delicious time of the year.

> . . . . . These naked shoots
> Barren as lances, among which the wind
> Makes wintry music, sighing as it goes,
> Shall put their graceful foliage on again,
> And more aspiring, and with ampler spread,
> Shall boast new charms, and more than they have lost.
> * * * * * * * *
> From dearth to plenty, and from death to life,
> Is Nature's progress, when she lectures man
> In heavenly truth; evincing as she makes
> The grand transition, that there lives and works
> A soul in all things, and that soul is GOD.—COWPER.

As soon as the ground is sufficiently thawed the farmer begins his work in the fields; he ploughs up his fallows, and sows Spring wheat, beans, and peas; sets early potatoes; drains wet lands; dresses and repairs hedges; lops trees, and plants those which thrive best in a wet soil, such as poplars and willows.

In clear weather the southern sky displays a grand exhibition of stars: the brilliant stars Sirius and Procyon, and those composing the beautiful constellation of Orion, remaining visible all night.

We cannot better conclude this article, than by calling the reader's attention to one of the two poems by Wordsworth, to which we have already alluded. This little poem is generally quoted, we know not for what reason, in a mutilated form; we prefer, however, to give it as the poet wrote it, without marring its beauty by making it incomplete.

TO THE SMALL CELANDINE.

PANSIES, lilies, kingcups, daisies,
Let them live upon their praises;
Long as there's a sun that sets,
Primroses will have their glory;
Long as there are violets,
They will have a place in story;
There's a flower that shall be mine,
'Tis the little Celandine.

Eyes of some men travel far,
For the finding of a star;
Up and down the heavens they go,
Men that keep a mighty rout!
I'm as great as they, I trow,
Since the day I found thee out,
Little flower!—I'll make a stir,
Like a great astronomer.

Modest, yet withal an elf,
Bold, and lavish of thyself;
Since we needs must first have met,
I have seen thee, high and low,
Thirty years or more, and yet
'Twas a face I did not know;
Thou hast now, go where I may
Fifty greetings in a day.

Ere a leaf is on a bush,
In the time before the thrush
Has a thought about her nest,
Thou wilt come with half a call,
Spreading out thy glossy breast
Like a careless prodigal;
Telling tales about the sun,
When we've little warmth, or none.

Poets, vain men in their mood!
Travel with the multitude;
Never heed them; I aver
That they all are wanton wooers;
But the thrifty cottager,
Who stirs little out of doors,
Joys to spy thee near her home;
Spring is coming, Thou art come!

Comfort have thou of thy merit,
Kindly, unassuming spirit!
Careless of thy neighbourhood,
Thou dost show thy pleasant face
On the moor, and in the wood,
In the lane—there's not a place,
Howsoever mean it be,
But 'tis good enough for thee.

Ill befall the yellow flowers,
Children of the flaring hours!
Buttercups that will be seen,
Whether we will see or no;
Others, too, of lofty mien;
They have done as worldlings do,
Taken praise that should be thine,
Little, humble Celandine!

Prophet of delight and mirth,
Scorned and slighted upon earth;
Herald of a mighty band,
Of a joyous train ensuing,
Singing at my heart's command,
In the lanes my thoughts pursuing,
I will sing as doth behove,
Hymns in praise of what I love.

ON EARLY IMPRESSIONS.

So powerful is the effect of first impressions and habits, that though a man may succeed in freeing his *mind* from prejudices, they will still retain some power over his imagination and his affections; and, therefore, however well he may speculate, his opinions will lose their power in situations where practical assistance is required; when his temper may be soured by misfortune, or ill-health, or when he may be exposed to the contagion of popular errors. How different

would be the case were education conducted from the beginning with judgment! Were pains taken to impress truth and virtue on the mind in early infancy, what aid would they not receive from the imagination and the heart, trained to conspire with them in the same direction! What advantages might not be derived from a proper attention to early impressions and associations, in giving support to those principles which are connected with human happiness! Let me suppose the happy period arrived when all the prepossessions of childhood and youth were directed to support the pure and sublime truths of religion and morality: they would assist and fortify our reason against the sceptical suggestions of irreligion, disappointment, and melancholy. Our daily experience may convince us how susceptible the tender mind is of deep impressions, and what important and permanent effects are produced on the characters and happiness of individuals, by the casual associations formed in childhood. It is the business of education, not to counteract this constitution of nature, but to direct it.

If it be possible for the influence of fashion to veil the native deformity of vice, and to give to low and sordid, and criminal pursuits and indulgences the appearance of spirit, of elegance, and of gaiety, can we doubt the possibility of connecting in the tender mind those pleasing associations with pursuits that are truly honourable and noble?——DUGALD STUART.

KIRKSTALL ABBEY, YORKSHIRE.

KIRKSTALL ABBEY is considered to be one of the most beautiful specimens of architectural ruins now to be found in England, and is one that has engaged the attention of numerous antiquaries, architects, and painters. It is situated in Yorkshire, in the lovely vale of the Aire, near the north bank of that river, and about three miles westward of the town of Leeds.

The abbey dates its origin in the year 1152. Henry de Lacey, being in a bad state of health, made a vow, that if he should recover, he would build an abbey in honour of the Blessed Virgin, and of the Cistercian Order. Accordingly, upon the recovery of his health, he gave the town of Bernoldswick, with its appurtenances, for this purpose; and the name was then changed to St. Mary's Mount. In 1147, Alexander, prior of Fountains Abbey*, was made first abbot of the new abbey then to be built; and on the 18th of May, with twelve monks and ten converts, he left Fountains Abbey, and located himself on St. Mary's Mount, the place being confirmed to him by the Archbishop of York.

Here they appear to have suffered many privations until the abbey was ready for their reception; but it was at length completed, Henry de Lacey, who made the first grant, being at the whole expense of the erection, himself laying the first stone.

Hugh Bigot, earl of Norfolk, afterwards claimed the lordship of Bernoldswick; and the abbot thence held it of him for five marks per annum; but at the request of Henry the Second, the earl afterwards made a free gift of it to the monks. During the life of this abbot, the buildings were extended by the addition of a church, dormitories both for monks and lay-brothers, refectory, cloister and chapter-house.

The revenues of the abbey were so well managed, that, at a visitation in the year 1301, the monks of this establishment were found to have 216 draught oxen, 160 cows, 152 yearlings and bullocks, 90 calves, 4000 sheep and lambs; while their debts amounted to only 160*l.*:—we say *only*, for many of the monasteries of that period were deeply in debt. At the dissolution of monastic establishments in the reign of Henry the Eighth, the endowments of Kirkstall Abbey amounted to 329*l.* 2*s.* 11*d.* per annum, by Dugdale's computation, or 512*l.* 13*s.* 4*d.* according to Speed. It was surrendered by John Ripley, the last abbot, November 22, 1540, the thirty-first of the reign of Henry VIII., by whom the site was granted to Thomas Cranmer, archbishop of Canterbury, and his heirs, in exchange for other land. In the reign of Edward the Sixth, the royal licence was granted to the Archbishop, to alienate the said premises to Peter Hammond and others, for the use of Thomas, a younger son of the Archbishop, and his heirs. It subsequently passed through several hands, and is now the property of the Earl of Cardigan.

Not many years after the dissolution of the abbey, various parts of the materials were carried away piecemeal. The lead from the roof, the bells, and everything of value which could be removed, were taken away for the king's use immediately after the dissolution; and subsequently the good people of Leeds resorted to the deserted abbey as a *quarry* whence they might procure stones for building; but its distance of three miles from the town, together with the increased use of brick, happily prevented these depredations from effecting the entire destruction of the building. But, as it has been observed, it is to the neglect of two centuries and a half, the unregarded growth of ivy, and the maturity of vast elms and other forest trees, which have been suffered to spring up among the walls, that Kirkstall has become, as a single object, one of the picturesque and beautiful ruins in the kingdom.

The general architectural merit of this abbey has been stated by Dr. Whitaker, the learned historian of Leeds, in the following words:—

The great merit of this structure, as a study for those who are desirous of assigning by internal evidence a proper date to every ancient building, is its unity of design and execution. Kirkstall Abbey is a monument of the skill, the taste, and the perseverance of a single man. Accordingly, there are in the original fabric no appearances of afterthought, no deviations from the first plan. Not only the arrangement, the proportions, and relations of the different apartments, are rigidly conformed to that peculiar principle which prevailed in the construction of religious houses, erected for, rather than at the expense of, the monks; but every moulding and ornament appears to have been wrought from models previously studied and adapted to the general plan. Deviating by one step from the pure Norman style, the columns of the church are massy as the cylinders of the former age, but channeled rather than clustered. The capitals are Norman, the intercolumniations, though narrow, yet nearly one-third wider than those of the most massy Saxon.

The whole building appears to be of the early Norman style, with the exception of some ornaments in the turretted and pinnacled style, and the upper part of the tower, which are of the age of Henry the Seventh and the Eighth. The church is in the form of a cross, and had a lofty tower, which remained entire until about sixty years ago, when an accident occurred which appears to have thus originated. The great kitchen of Kirkstall, together with a suite of apartments extending eastward from the south-east corner of the quadrangle towards the foundations of the abbot's lodgings, is of much later date than the rest; and an imprudent superstructure on the original tower, which rose but little above the acute-angled roof of the church, overweighed one of the four great columns at the intersection, which, after giving warning of its approaching fall for several years, was suddenly crushed by the vast superincumbent pile, on Wednesday night, Jan. 27, 1779, and brought down in its ruin more than two sides of the tower. Considered

* See *Saturday Magazine*, Vol. XV., p. 223.

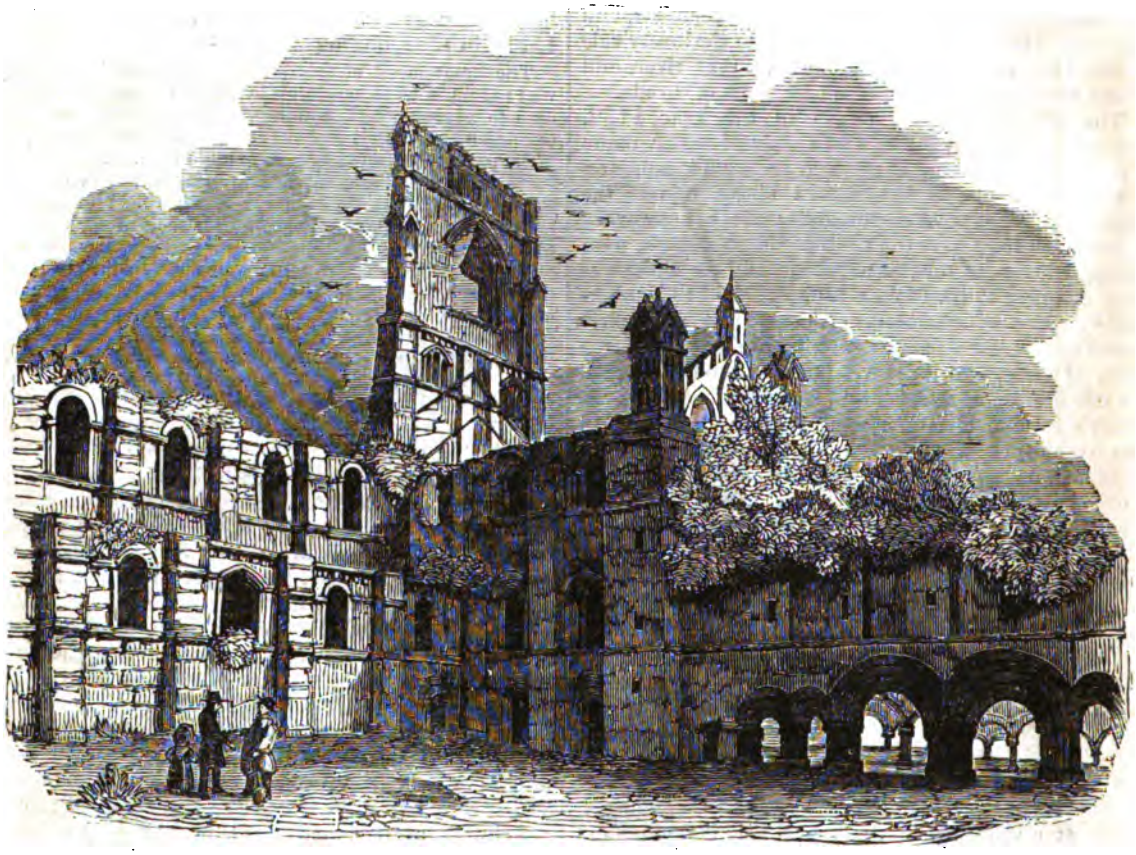
merely as a ruin, the effect of the church was perhaps improved by the catastrophe; but the visible detachment of the end of the north transept, and above all of the great east window, from the adjoining walls, threatened to reduce the whole to ruin.

The chapter-house, which still remains nearly entire, is partly a remnant of the original structure, and partly an enlargement shortly before the dissolution. The refectory was a vaulted room, supported by cylindrical columns, each consisting of a single stone. The dormitory is supposed by some to have been over the set of buildings that verge to the southward from the transepts, while others suppose that this part of the monastery was placed over the range which communicates with the south-west angle of the church.

The cloister-court, or quadrangle, represented in our engraving, surrounds a range of buildings; and from this court, as Dr. Whitaker justly observes, the varied perspective, the broken masses of alternate light and shade diversifying the gloom, must have been admirably adapted to the solemnity of the monastic life. The cloister-court is now preserved from intrusion as an orchard, but it was formerly the cemetery not only of the monks, but also of the wealthy laity in the neighbouring country. A few fragments of gravestones and crosses remain, but there is only one remnant of an inscription, on which little more is visible than the word RICARD, in old English characters. The lavatory, near the south-east corner, has been richly adorned; westward from this was the refectory, a groined and not very spacious apartment. The original windows of the abbey have been single round-headed lights, the first enlargement of the genuine Saxon and early Norman loophole, which was never intended for glass. For though Benedict Biscop is known to have introduced this great improvement into his church at Jarrow, the use of it does not appear to have been general among the Saxons, and the narrow apertures in their massy walls evidently point at a struggle between the admission of light and the exclusion of cold.

But no sooner (says Dr. Whitaker) did the use of glass become general, than windows began to expand, first into broader single lights, and next into two, included in the sweep of one common arch, but I conceive the introduction of painted glass to have suggested the necessity of widely-ramified windows, first, perhaps for the purpose of displaying an extended surface of vivid colouring, or a large group of historical figures, and, secondly, in order to compensate, by a wider surface, for the quantity of light excluded by their tints. This idea, which I have never met with before, is confirmed by chronology. The earliest stained glass which we read of, at least in the north of England, was in the possession of the monks of Rivaulx about the year 1140. At this precise period, the narrow single lights began to expand; and as the use of it grew more and more general, the surfaces of windows became wider and more diversified.

It is a curious circumstance, that within a few days after the fall of the tower before alluded to, several fragments of little tobacco-pipes, or at least smoking pipes, were discovered imbedded in the mortar. This has been considered as a proof that long before the introduction of tobacco from America, the practice of inhaling the smoke of some indigenous vegetable prevailed in England.



RUINS OF KIRKSTALL ABBEY.

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THE

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VIEW OF THE LAND-SLIP NEAR AXMOUTH, DEVON, LOOKING TOWARDS THE EAST.

EXTRAORDINARY CONVULSION AND LAND-SLIP;

NEAR AXMOUTH, DEVON.

THE convulsion of which we now give a brief description, occurred on the south coast of Devonshire, at the distance of two miles east of the mouth of the river AX, and the town of Seaton, and about one and a half south-east from AXMOUTH village. We will not enlarge on the geological interest it has excited throughout the country, or the curiosity which has been evinced by the thousands of persons who have crowded to examine it, but enter at once on the subject.

It commenced at three o'clock in the morning of Tuesday, the 24th of December, 1839, when the family of Mr. Chapple, who occupies the farm of Dowlands about half a mile distant, was aroused by a crushing and low rumbling sound. Nothing, however, further occurred until four o'clock on the morning of Christmas Day, when some labourers of the farm, who tenanted two cottages built on the slope of the debris of the undercliff, were awakened by noises similar to that which had been heard the night before. On getting up and endeavouring to open the door, the man who dwelt in one of them, discovered that it was so wrenched and distorted, that he could not accomplish his purpose without violence and the assistance of a crow-bar. He then saw that the ground was sinking beneath him—that it was subsiding in terraces towards the sea—that it was gaping with fissures—and that the walls of his dwelling were cracking and tottering as if ready to fall. He then hastily got his family out, and proceeded to his landlord and gave the alarm, for no one knew how far it would go, or where end. During the whole of Christmas Day the disruption continued; making a roaring and grinding noise resembling some kinds of thunder, and causing the earth to tremble at a great distance from the actual disturbance. An immense tract, extending east and west one mile in length, and many hundred feet in width, subsided or sank down so as to form a ravine or chasm more than two hundred feet in depth. Parts of several fields, included in this area, descended with great regularity and precision; so that their surfaces, still bearing their crops, are now at the bottom not much broken up, and only thrown into a slanting position, instead of being level, as they were before. The hedges which divided these fields can be traced on along the fallen portions, as well as across the high country which has remained unmoved. This regularity however, is not universal. Towards the eastern and western extremities of the chasm—particularly towards the former—the devastation has been extraordinary and complete. Columnar masses, resembling vast pinnacles or towers of chalk, are in some places left standing, whilst the more broken and crushed parts have sunk around them: immense banks of flint and broken rock rise in hillocks on every side, whilst the ground is rent and scored in seams many feet wide and deep. An entire orchard is to be seen in one part, which has descended to a level much lower than it before occupied: some of its trees are overthrown and uprooted, whilst many others are still standing, and will bear fruit next season. A wood of forest trees has also been broken up in the same way: the cottages before mentioned are in ruins, and their gardens destroyed: and the devastation around, although dreadful and terrific, is full of beautiful grandeur.

This chasm, however, is but one moiety of the phenomenon. It ranges east and west, and parallel with the sea shore: and in running through the district, cuts off from the main land a portion of the original country measuring one mile in length by half a mile in width. This huge mass, so cut off, has been forced on its foundation many yards in a southerly direction towards the sea, inclined somewhat from its former level, and rent and depressed into terraces. The bed of the sea also, the whole way along in front of it, has been lifted up to the height of forty feet above the surface, to a great distance out from the original line of coast, now forming reefs and islands, inside which are bays and small harbours, into which boats have been, and have found good soundings. These reefs of thrown-up rock are covered with marine productions, such as corallines, seaweeds, and shells. The western basin somewhat resembles the Cobb at Lyme; but it has the advantage over it in being larger in size: the eastern basin is entered through a long narrow channel, which then widens into a larger bay.

We must now enter into an inquiry as to the causes of so vast and violent a revolution. It was at first supposed to have been an earthquake, according to the usual acceptation of the term, that is, a dislocation of the earth by the agency of subterranean fire. A closer examination, however, of the component materials of the district, and a mature consideration of other accessaries acting thereon, will incline to decide otherwise. It is most probable that water, and not fire, has been the cause; and, in order to make this apparent, it is requisite to mention the geological construction of these hills.

The upper stratum, running through the cliffs, is chalk. This rests on the green-sand formation, much consolidated, and alternated with seams of chert, a species of opaque flint. Beneath this comes a deep bed of loose, sandy marl, or "fox mould," as it is locally termed, and it is this unstable and friable soil that contains the chief causes of the disturbances under consideration; and lastly this stratum is supported by the blue lias, a formation partly composed of beds of tough and impenetrable clay. These being the component strata, let it be borne in mind, in order to the understanding of this explanation, that all the soils above the lias are pervious to water, but the clay in the lowest bed resists it. The rain and other atmospheric moisture which falls on the upper surface, and the springs of water which may tend towards one point, will filter through the chalk and sandstone, and be mainly absorbed in the spongy fox mould. It cannot descend lower, because the clay of the lias resists it. Now, where the edges of these soils are exposed along the cliffs, so as to lay them bare and unsupported, this water will be seen oozing in springs out of the sandy mould immediately above the clay—which it carries away with it—slowly and almost imperceptibly perhaps, but surely and inevitably. Such a process, going on through the course of ages, must necessarily undermine the superincumbent strata; and when a season occurs more wet than ordinary, and such indeed as England has experienced during the past summer, the catastrophe is hastened on with a sudden crash, even such as we now describe. The precipitate and violent subsidence of such a great mass, had power, by its overwhelming weight, to act laterally, and it was this lateral force which served to thrust upwards the bed of the sea, previously seven fathoms beneath the surface, now into reefs forty feet above.

Although the effect produced is as terrific and ruinous as if the fires of Vesuvius had been the agent, yet we have endeavoured to show that fire had indeed no part in it. Several other places on the south

coast of England exhibit the remains of similar convulsions, wrought, without doubt, in a similar way, but in what age it is impossible to say, as no record of such an occurrence exists to inform us. The Undercliff in the Isle of Wight may be instanced as one; the Pinhay Cliffs, only three miles east of Culverhole Point (the subject of this paper) as another; and a third on the cliffs between Beer and Branscombe. It is not a little remarkable that Providence should not have suffered a single life to be lost during so great a revolution, although it commenced in the middle of a dark night, when the inhabitants of the two cottages which were shortly reduced to utter ruin, were in their beds.

The concourse of persons which has flocked to the scene of devastation is incredible; many thousands have been there, congregated from almost every county in the kingdom, even the most distant. The crops of the two farms which have suffered (that is, Dowlands and Little Bendon,) were getting so spoilt and trodden down by these visitors, that the tenants, in order to save something from the wreck, and in some sort remunerate themselves, held it necessary to levy a toll of sixpence per head on all trespassers. In this way it is supposed that they are reaping a silver harvest, far richer even than if the catastrophe had never occurred. The crowds during the first week were too numerous to be counted.—PETER.

A WARNING.

VACCINATION was introduced into Ceylon, an island off the southern point of the Peninsula of India, in the month of August, 1802, for, "this devoted island had, in former years, been the scene of frightful devastation from the small-pox, which carried such terror into the minds of the natives, that, in several instances, upon the occurrence of this disease in a town or village, all the inhabitants fled, voluntarily incurring the miseries of hunger, and leaving their homes to be overrun by the wild beasts of the forest, rather than wait the attack of this still more fearful enemy."

But, the plague was stayed; in January, 1806, being *five years and a half from the introduction of vaccination, the small-pox was extinct throughout the whole of the British possessions in Ceylon.* From 1806 till the year 1810 a few scattered cases of the disease occurred, but from this date till 1819, small-pox was quite unknown.

This, however, was a fatal calm, for parents had neglected to use for their offspring that means of protection which had secured themselves from the ravages of this frightful disorder, and in July, 1819, the small-pox returned with redoubled violence. As security had begotten apathy, so now, danger and death frightened the poor Ceylonese into using the easy alternative, vaccination. We give these simple facts of history without one word of comment, believing that they must tend to allay the fears of those who have already sheltered their home, under this great discovery, and hoping that they will excite the fears of those who, from whatever cause, still neglect to use the proper means of safety to themselves and others; means which can do no harm, but which, even in the life-time of Dr. Jenner, saved more lives than Napoleon lavished, and of the importance of which Napoleon himself judged so highly, that the name of Jenner was a passport on the Continent, and prisoners were released at his intercession.

THE highest learning is to be wise, and the greatest wisdom is to be good.—MARCUS ANTONINUS.

ON THE IVORY STATUES OF THE ANCIENTS.

THE fairness and beauty of ivory is such as to cause it to be sought after and valued by all the most civilized nations of the earth; by all people, in fact, who have a taste for ornament, and a capacity for producing it. The delicate texture of ivory, its pleasing colour, and its high polish, have furnished the poets and writers of imagination with beautiful tropes and similes, and the merchant with a source of traffic, from the remotest ages of antiquity.

Homer speaks of the Trojans using ivory in the make of the bit of a horse's bridle, which must have been 1200 years B.C. After this, as the commerce of Phœnicia enlarged itself, ivory became one of the staple articles of commerce. "*Horns*" or tusks "*of ivory,*" are thus referred to by the prophet Ezekiel, xxvii. 15. About two hundred years after the Trojan war, the trade in ivory received the attention of the Israelites, under King Solomon. Soon after the time of Solomon, we read of houses and palaces made of this costly and luxurious material; luxurious for its elegance and beauty, costly for its comparative scarcity, if then obtained only from the teeth and tusks of elephants captured in Central India. The ivory was sent, at a great labour and expense, overland, or by a tedious coasting voyage by sea. In addition to Solomon's throne, which was made of ivory, we read also of "beds of ivory," and "vessels of ivory," but they are referred to by the Sacred Writers, as characteristic of worldly greatness and luxury.

When ivory was thus extensively employed in other nations, it is not to be wondered at that the manufacture of works of ivory should have been common among the Greeks. From some sources we learn that the father of Demosthenes, the celebrated orator, had a manufactory for making knife-handles of this material. His proper profession was that of a smith or cutler. In addition to this, his dealings in ivory were so large, that he supplied others as a wholesale merchant. But the employment of ivory in the domestic concerns of the Greeks does not demand our attention so much as its use in the construction of certain vast and colossal STATUES, such as that of which a view is given to the notice of the reader, on the following page.

These statues were termed *chryselephantine,* that is, composed of *gold* and *ivory.*

The great master of the art of working statues in ivory was PHIDIAS. The circumstance which led to the erection of the statue of the Olympian Jupiter was as follows. Phidias had made a statue of Minerva, at the request of Pericles, which was placed in the Parthenon at Athens. It was of ivory and gold, and measured thirty-nine feet in height. On the summit of the helmet of the goddess was a sphinx, and on each side of it were griffins. The figure was erect, with a robe reaching to the feet. On the breast was the head of Medusa, formed in ivory; in one hand a figure of Victory, four cubits in height, in the other hand a spear, with a shield at her feet. There was more gold than ivory in this statue; but the eyes, the face, the feet, and the hands were of ivory. The gold used in the statue was so disposed that it could be taken off and weighed at any time, if the honesty of any of the attendants of the temple were implicated.

The execution of this splendid work raised Phidias many enemies, and he was accused of having carved his own image and that of Pericles, his patron, on the shield of the statue of the goddess, in such a way that if any one were to remove his figure from the

shield, the whole would fall to pieces. For this he was banished from Athens by the clamorous populace. He retired to Olympia, a town of Elis, in the Peloponnesus, where he determined to revenge the ill-treatment he had received from his countrymen, by making a statue which should eclipse the fame of that

STATUE OF JUPITER, BY THE GREAT SCULPTOR PHIDIAS.

of Minerva. He was successful in the attempt, and the statue which he made of JUPITER OLYMPIUS was always reckoned the best of his productions, and has passed for one of the wonders of the world. The people of Elis were so sensible of his merit, and of the honour he had done their city, that they appointed his descendants to the honourable office of keeping clean this magnificent statue, and of preserving it from injury.

The statue of Jupiter was about sixty feet in height. The god was represented sitting upon a throne, which, like the statue, was of ivory and gold. He wore a crown upon his head, in imitation of a branch of the olive-tree, and in his right hand was a figure of Victory, also of gold and ivory, with a fillet in its hand, and crown upon its head. His left hand held a long and beautiful sceptre, made of different metals, on the top of which was the figure of an eagle. The sandals and robe of the deity were of gold, and on the latter were richly strewn the figures of animals and flowers, particularly lilies. The throne was bedecked with gold and precious stones, and inlaid with ebony and ivory: it was also ornamented with pictures and sculptures of animals and statues; four figures of Victory, in a dancing attitude, being represented at the four feet. Two other Victories stood at the feet of the god, and the pedestal, upon which the whole rested, was adorned with mythological compositions.

The statue of Jupiter, thus constructed in a sitting posture, and of such dimensions, touched almost the summit of the roof of the temple, so that it appeared that if the god had risen up, he would have lifted up the roof. The figure of Jupiter sitting is represented on several silver coins made in the time of Alexander the Great, and his successors. Pausanias, a Greek writer, about 170 A.D., tells us that "the skill of Phidias received the testimony of Jupiter himself. The work being finished, the artist prayed the god that he would make known if he were satisfied, and immediately the pavement of the temple was struck with lightning at the spot where in my time stands a vase of bronze." Such was the legend devised and published by the heathen priests, in order to bow down the people of the most polished and civilized countries of antiquity, before this colossal type of idolatry. However advanced in worldly skill and wisdom the ancients may have been, at any time or place, they were immensely behind those who derive their spiritual knowledge from the Scriptures of Truth, which aid and confirm our more enlightened reason, in the solemn and unexceptionable position that "we ought not to think that the Godhead is like unto gold, or silver, or stone, graven by art or man's device."—Acts xvii, 29.

It appears that this image continued for several ages to assist the illusions of a false religion, for we are told that in the time of the Roman Emperor Antoninus, A.D. 160, the fame of this great work drew crowds of worshippers to Elis, it being generally considered to be a personal misfortune, if any one died without seeing it. That the statue, which was made of a material not very durable, should continue so long sound and entire, was due to its being regularly cleansed and rubbed with oil, and so preserved from the consumptive effects of damp. The statue existed as late as the year A.D. 370.

When speaking of ivory statues, thirty or sixty feet in height, and proportionate in all their parts, it must naturally occur to the reader to ask whence the ivory for such enormous figures was obtained; for many such ivory statues were made in different parts of Greece, by other artists besides Phidias. Without replying directly to this question, we must take into consideration what appears to have been the *mode* of structure used in erecting these statues.

M. Quatremère de Quincy has written much that is learned and ingenious on this subject. According to his opinion the statue need not, nor could it have been of *solid* ivory throughout its diameter, not from the difficulty of getting a sufficient supply of the material, but from observation of the form of the elephant's tusk, which is partly hollow and partly solid: but Quincy thinks, however, that the ancients were able to obtain tusks of larger dimensions than those usually seen at the present day. According to his theory or opinion, an art existed formerly of rendering the cylindrical part of the tusk flat when cut through lengthwise, and flat plates were thus procured, from about six to twenty-four inches in width. After this, he imagines that, a block of wood having been shaped as a sort of mould for the ivory, the individual plates were fixed upon it, after being cut and polished in exact resemblance to the corresponding portions of a model previously executed.

As the ancients were in the habit of constructing not only vast images of ivory for religious purposes, but of using this substance very profusely in making friezes, doors, porticoes, &c., as well as for many of the household conveniences of life, their supply must have been much larger than that which is available to the moderns. From the abundance of the fossil

remains of elephants in various parts of the world, it has been inferred that this race of animals was more numerous formerly than now. This inference is likewise considerably strengthened by the testimony of history to the vast number of elephants formerly used in battle, and slain for sport on the arena of the Roman Circus. It is further remarkable that fossil remains of elephants have been, and still are, constantly found in all parts of the earth, where now the elephant does not exist, and such fossil remains have not been discovered in those regions in which this animal is now naturalized. Lastly, fossil remains of certain huge species of elephant have been dug up, which species now exist nowhere. From all this we conclude that the elephant was once a commoner animal in almost all the regions of the ancient world than it now is, and that the supply from animals caught and domesticated, as likewise from the fossil remains just alluded to, the wrecks, perhaps, of antediluvian times, was amply, or more than, sufficient for all the sacred and profane purposes to which this material was anciently applied.

They say that the goodliest cedars, which grow on the high mountains of Libanus, thrust their roots between the clifts of hard rocks, the better to bear themselves against the strong storms that blow there. As nature hath instructed those kings of trees, so hath reason taught the kings of men to root themselves in the hardy hearts of their faithful subjects. And as those kings of trees have large tops, so have the kings of men large crowns, whereof as the first would soon be broken from their bodies, were they not underborne by many branches, so would the other easily totter, were they not fastened on their heads with the strong chains of civil justice and martial discipline.—Sir Walter Raleigh.

Let every mother consider herself as an instrument in the hand of Providence,—let her reflect on the immense importance the proper education of one single family may *eventually* prove! and that, while the fruit of her labours may descend to generations yet unborn, she will herself reap a glorious reward;—let her behold our children rich in intellectual and moral worth, their desires regulated by virtue and religion, their passions under the control of reason, and their hearts in the possession of that "peace which passes understanding;"—let her see them ennobled by that species of superiority which alone commands the reverence of the heart, and enjoying that true dignity which confers the only real distinction;—let her imagine her children bedewing her tomb with tears of filial affection and gratitude, and even in the latest hour blessing her memory as the cause of that happiness which has marked their path on earth, and as the conductor to that hope which sweetens the hour of dissolution.—Miss Hamilton.

The unanswerable reasonings of Butler never reached the ear of the gray-haired pious peasant; but he needs not their powerful aid to establish his sure and certain hope of a blessed immortality. It is no induction of logic that has transfixed the heart of the victim of deep remorse, when he withers beneath an influence unseen by human eye, and shrinks from the anticipation of a reckoning to come. In both the evidence is within, a part of the original constitution of every rational mind, planted there by Him who framed the wondrous fabric. This is the power of conscience; with an authority, which no man can put away from him, it pleads at once for his own future existence, and for the moral attributes of an omnipotent and ever-present Deity. In a healthy state of the moral feelings, the man recognises its claim to supreme dominion. Amid the degradation of guilt, it still raises its voice and asserts its right to govern the whole man; and, though its warnings are disregarded, and its claims disallowed, it proves within his inmost soul an accuser that cannot be stilled, and an avenging spirit that never is quenched.—Dr. Abercrombie.

A DISCOURSE ON GEOLOGY.

III.

The Utility of Geology.

The day is perhaps almost past, for questions to be mooted as to the utility of general science: its practical application has been of such importance, so available to various economical purposes, within the last half century, that on this subject we shall scarcely meet with a dissentient voice. The value of geology, however, on account of its comparative newness and its being therefore, less generally known is, perhaps, less acknowledged than it merits. It may be interesting to adduce a few instances of its practical application, and in attempting this, we cannot do better than adopt the language of an eminent geologist, from whose writings we have already made some extracts.

"The geologist," he observes, "can confer on mankind benefits of no mean order; can assist the farmer to fertilize the surface of the earth, so that two blades of grass shall grow where one grew before, and can impart system to the labours of the miner, so that, no longer groping his way in the dark, he may prosecute with confidence and with an approach to certainty, those costly operations which are necessary, in order to extract from the earth the treasures which have been there stored up for our use.

"The mineral wealth of the earth has not been distributed through it at random; but each formation (as geologists call a group of strata,) is, over extensive areas at least, the peculiar receptacle of certain minerals.

"In the present state of our knowledge, it is too much to affirm that these general rules prevail over the whole earth; but they hold good over extensive portions of the earth's surface, though, even within those areas, there are exceptions to the rule; and the study of the rule and the exception is alike profitable. Let us take for example the case of coal. Deposits of vegetable matter occur in formations of all ages, but they occur only in thin seams, and in small quantities. The great coal-deposit lies between two formations known by the names of the old and the new red sand-stones, closely resembling each other in mineral composition, though very different in their zoological characters. The coal-fields of Brora, in Scotland, and of Whitby, in Yorkshire, can scarcely be called exceptions, though they are situated in a newer group of rocks, called the oölitic. For they afford an inferior kind of non-bituminous coal, worked only to supply a local demand. In communicating these facts we are obliged to anticipate the knowledge of our readers as to the order in which the strata succeed each other,—

Things by their names we call, though yet unnamed,

and therefore, perhaps, they can scarcely perceive the full import of these remarks.

"Now, the practical results to be derived from a knowledge of this general rule and its exceptions, are these: That searches for coal ought only to be undertaken with the greatest caution, and under peculiar circumstances, in strata beyond the limits of the regular coal-strata; the working of them may sometimes be attended with success in districts which are ill-supplied with coal from the coal-measures properly so called. The same remark applies to the lignite, or wood-coal, of the tertiary strata, which is wood partially carbonized, affording a very inferior fuel, which would never be used where the produce of the coal-fields of Newcastle, or Staffordshire, or South Wales, could be easily obtained. In England, which is so abundantly supplied with coal of the best description,

lignite occur but sparingly, but on the Continent it is sometimes largely developed, and extensively worked.

"Copper is not generally met with in strata more recent than the old red sand-stone; but there are in England some exceptions to this rule:—the celebrated Ecton mine, in Staffordshire, and the Llandidno, or Orme's Head mine, in Caernarvonshire, being situated in the carboniferous limestone. On the Continent, the ore of this metal is worked in a formation even still more recent, the copper-slate of Thuringia being a portion of the new red sand-stone series. The advantages to be derived by the practical miner from a knowledge of these facts are obvious. On the one hand, the general rule will prevent a waste of capital, in fruitless searches for certain minerals in strata where they rarely occur, and on the other hand, the exceptions will prevent that slavish adherence to the general rule, which would prohibit all attempts to work them in those strata, when the indications are in other respects favourable; and Geology furnishes us with means for discriminating the different strata, and teaches us their order of succession; so that having ascertained to what part of the series a given rock belongs, we know what other rocks we may expect to find to find above and below it.

"Mineral veins, again, are not equally productive through all parts of their course, but masses, or 'bunches,' as they are called, of ore, are locally distributed through the vein, being connected by thin strings of ore, or by barren portions of the vein-stone, which are only useful as guiding the miner to the richer deposits. His object, therefore, is to arrive at the productive portions of the vein, with the expenditure of the least possible labour; and this object he attains by observing the circumstances under which these bunches occur in those particular veins on which he is employed, till by repeated observations, he discovers the laws which they follow, and knows those parts of a vein which are likely to be most productive. But these laws are not the same in all mineral districts. If, therefore, we remove from any of our most celebrated mining-counties one of its most experienced practical miners, and if we place him in another, where different laws, for the distribution of ore in veins prevail, and where, though minerals may be abundant, those laws are not yet known by experience, because no mines have yet been worked; all his practical knowledge acquired from observations in his native district will avail him nothing, perhaps will become absolutely injurious, because it will be likely to prevent his paying attention to the suggestions of those who have studied mineral veins on a more general scale. This study forms one department of Geology, and the mine-agent who possesses most of it, is most likely to conduct mining operations with success. A person of this kind is too often branded by the ignorant with the epithet 'theoretical,' whereas, he is in fact, the really practical man, because he concentrates and combines in himself the knowledge derived from the observations of all practical miners in every part of the world.

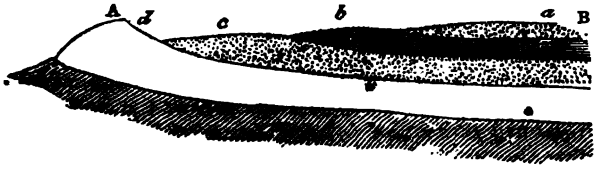
"The benefits which Geology can confer on agriculture are neither few nor trifling. Our limits will not permit us to point out in detail how the nature of a soil depends on that of the rocks from the disintegration of which it was derived, nor to show how particular plants affect particular soils, in which, in a state of nature, they exclusively flourish, and in which they flourish most in a state of cultivation, so that by consulting a good geological map, of a given district, we may predict, before we enter it, the species of crops which will be found most extensively cultivated there, and which experience has proved to be best adapted to it.

"A due mixture of the earths in a soil is essential to its fertility. The most productive districts of England have been made so by nature, and owe their fertility to this mixture; and it is by copying nature that we must proceed in our endeavours to improve those that are barren. Neither pure clay, sand, nor chalk, afford productive soils. Those are the best which contain a mixture of the three earths, silica, alumina, and lime, with a portion of decomposed animal and vegetable matter. These are the soils, so much coveted by the farmer, which will bear repeated cropping without manure. The principal ends proposed in agricultural improvements are, to render wet soils dry, and dry soils sufficiently moist; to render adhesive soils loose, and loose soils sufficiently adhesive; and the proportion in which the earths above mentioned should be mixed for these ends, must depend upon the climate and the substratum. Aluminous, or clayey, soils retain too much moisture, and siliceous, or sandy, soils part with it too rapidly; and a soil, good in itself, may be rendered unproductive by resting on too retentive or too porous a substratum. Draining or irrigation are in such cases the remedy. When one of the earths prevails in a soil to the exclusion of the others, great improvement may be effected by the addition of that which is deficient, and it is astonishing, as M. De la Beche has remarked, that the superior fertility observable along the line of junction of two rocks, occasioned by the mixture of their component parts, has not oftener induced agriculturists to have recourse to various artificial mixtures of the materials of rocks adjacent to each other. There are districts in which such mixtures have been practised with the greatest success; but, in general, farmers rely too exclusively on farm-yard manure. Clay, sand, and limestone, are, nevertheless, mineral manures of the greatest value, and have changed the face of whole districts that were before comparatively barren. By such mixtures the constitution of the soil has been improved,—causing the animal and vegetable manure afterwards applied to be more efficacious.

"The clay lands of Essex have been greatly improved by the use of chalk. This acts upon the land in several ways. It decomposes any free acids, and some acids in combination, naturally existing in the soil, and which are prejudicial to vegetation, and it acts mechanically, by rendering the soil more pervious to moisture, and affording greater facilities for the roots of plants to expand. When chalk is not at hand, a dressing of sand or fine gravel will produce some of these results, particularly if it contains calcareous matter, in the shape of fragments of limestone or shells. Clay, again, is equally efficacious on sandy soils, by increasing the power of the soil to retain moisture, and by enabling the roots to maintain themselves firmly in the ground.

"In Norfolk and Suffolk, vast tracts of land, which were before incapable of bearing corn, have, by the application of clay, been made to produce good crops of wheat, barley, clover, and turnips. Thus a greater number of cattle are kept upon a given area, and the quantity of animal and vegetable matter returned to the soil, is proportionably increased. The mineral manures are, in general, too much neglected, with the exception of lime (the injudicious use of which too often runs into the abuse), and even in those districts where they are applied, they are frequently brought from a distance, when, though not visible on the surface, they exist at a small depth below it, sometimes under the very field for the improvement of

which they are required. Now, who, we would ask, is most likely to discover them,—he who never looks deeper into the earth than the bottom of his ditches, or he who studies the position of rocks, with respect to each other, and for this purpose examines every natural section by which they are exposed to view in cliffs and ravines, and every artificial section laid open by mines, wells, and other excavations?



"Let A B, in the annexed diagram, represent the surface of a district composed, like some of the eastern parts of England, of strata of sand, clay, and gravel, resting upon chalk, all the strata having a slight inclination to the eastward, or towards B: a farmer cultivating the sandy soil at *a*, knows, for he observes it in riding to market, that at a certain distance from his own farm he shall cross a tract of clay, *b*, and that, after leaving that, he shall meet with sand and gravel again at *c*, and that at *d* he shall quit the plain and reach hills of chalk. But, he does not know, and he would probably laugh at the person who communicated the information, that all the strata *b*, *c*, and *d*, are to be found under his own land at *a*, at a depth proportioned to the thickness and inclination of the strata, so that a bed which, in one part of an estate will be at a considerable depth, may rise in another very near the surface. But these are points to the determination of which the geologist applies himself, and having ascertained, from the nature of the embedded fossils, that the stratum, *a*, is the crag, and *b* the London clay,—he knows that by proceeding in a direction contrary to that in which the strata dip, he shall meet with the sands and gravels of the plastic clay, as well as with the chalk, rising successively to the surface."

[Abridged from ZORELLIN'S *Recreations in Geology*.]

THE JACKALL AND HIS FRIENDS,

OR, THE SELF-PURVEYOR; A FABLE.

Some men attain their selfish ends
By separating dearest friends.
The traveller, in his farthest range,
Ne'er met a company so strange,
As strolled along, one summer's day,
The forest green, in search of prey.
A Jackall led the motley crew,
As pioneer and steward too.
Next came a Tiger in his pride:
A gaunt Wolf followed with a stride.
A keen Ichneumon joined the throng,
With whom a small Mouse tripped along.
"Hush!" said the Jackall, "friends, prepare!
An Antelope stands grazing there:
On him we might most richly feed,
But then he beats us all at speed;
What's to be done to gain the prize?"
"Nay," said the Tiger, "you advise."
"Well, honoured Sir, the beast, I see,
Has lain him down 'neath yonder tree,
Our friend the Mouse here, I propose,
Should softly creep, and gnaw his toes;
Then when he halts, with pain distressed,
We'll trust to *you* to do the rest!
'Twas done. The Mouse, with coat of gray,
Wound through the grass his noiseless way,
And when the outstretched foot he found,
Struck to the quick a secret wound.
Swift on his feet the creature sprang,
But lo! his speed was all unstrung!
Then leaped the Tiger, with a roar,
And felled him to arise no more.
While his poor life ebbed fast away,
The brutes came round him where he lay.
"This," said the Jackall, "*is* a treat!
But, gentlemen, before you eat,
I pray you bathe, whilst I remain
To guard the carcase of the slain."
Forth to a stream the friends repair,
And make their due ablutions there.
"Now," thought the Jackall, "how shall I
Cheat each companion with a lie?
If for myself I keep this feast,
'Twill last me for a week at least."
First, to the Tiger, as he sped,
Refreshed and pleased, the robber said,
"O Sir, I heard the Mouse declare,
This victory here was *his* affair!
For what could you have done forsooth,
But for his sharp and dainty tooth?"
The Tiger turned about and frowned,
Then sought the wild woods with a bound,
Growling, "What Tiger ever deigned
To eat a meal a Mouse had gained?"
The hero gone, the work was short
With claimants of a meaner sort.
When the half-famished Wolf drew near,
The Jackall whispered in his ear,
"Sir Wolf, I tell you as a friend,
Yon Tiger wishes to contend
With all or any who dispute
His title to the slaughtered brute!"
"Is't so, dear Jackall? then adieu,
But *you'll* avoid the tyrant too?"
"Yes, yes, anon, I only wait
To save our comrades from their fate."
The Mouse arrived, expecting cheer,
"Hist!" said the Jackall, "fly for fear!
The Tiger's hungry; mind you that:
And what's a Tiger but a Cat?"
The poor Mouse, stealing fast away,
Saw no more daylight all that day.
Th' Ichneumon now approached alone,
To whom the thief, with altered tone:—
"If you, Sir, dare maintain a right
In th' Antelope, prepare to fight!"
"Not for the world!" th' Ichneumon cried;
"One loss I patiently abide,
The loss, when hungry, of a meal;
But wounds are difficult to heal;
Nor will I now expose my paw
To burns from violence or law."

Trust not a shrewd projector's plan,
Until you know and prove your man;
E'en then proceed with thoughtful care,
Lest, losing your invested *share*,
You mourn your labour, worse than lost,
Whilst knavery revels at your cost.

ON MILITARY DRILLING. II.

While standing in the position of *attention*, even the eyes of the soldier are under the command and guidance of the officer. On the word "*Eyes right*," or "*Eyes to the right*," the eyes must be turned in that direction, but without any movement of the head. The reverse must be observed at the word "*Eyes left*," adn at "*Eyes front*" they must be brought back to the front. The principal use of this is in *dressing*, or forming into a perfectly straight rank, which is of course of great importance. This is done either *by the right*, or *by the left*, the word "*right dress*," or "*left dress*," being given. Every soldier then turns his eyes to the right or left, and moves forward or backward, till he can just see the face of the second man from him and no further; he is then exactly in line. In dressing by the right, the right flank stands still, and in dressing by the left, the left flank stands still; for it is evident that the flank by which the rank is dressed must govern the motions of all the rest, so that if he were to move, all the rest must move also,

In dressing, great care is taken that the recruits turn their eyes only, and not their bodies, shoulders, or even heads, and bending forwards or backwards must on no account be allowed; for if a man who was behind the line were to bring himself apparently into it, by bending forward, he would obviously be no longer *dressed* when he resumed his upright position. Neither is any sudden change of place allowed in dressing, but the body is brought to its place gradually, by a succession of very short quick steps, which do not derange the upright position of the body. The recruits are practised in this peculiar motion, by ordering the whole of them to *dress forward* or *backward* at once, and to continue such motion till they are told to halt.

The next thing which the recruit is taught, is to go through the *facings*, of which there are eight. Each facing consists of two motions, first, placing the feet in a peculiar position, and, secondly, turning round on the heels into the new direction, or *face*, which the body is to assume. The preparatory placing of the feet differs according to the nature of the turn, or face, to be made, but in this first movement the left foot remains steady: it is the right foot only which is drawn back more or less in all facings towards the right, and advanced in the facings towards the left. Between the two movements a short pause is always to be observed. But, in the case of recruits at drill, after the *first* movement has been made, the word "two" is given by the drill-officers, whereupon the facing is completed, and not till then. This remark applies to the first four facings.

1. "*Right face*" implies a turn of ninety degrees, or a quarter of a circle, towards the right; so that the body may be at right angles to its proper position. To effect this, the right foot is drawn back four or five inches, so that its hollow part may fit on the left heel: the toes are then lifted up, and the body passes smoothly and quickly round on the heels, which will be found closed in their proper position, when the turn or facing is completed.

2. "*Left face*" is a similar turn, but to the left instead of to the right. The right foot is therefore advanced as much as it was before drawn back, so that the heel may be placed in the hollow of the left foot. The turn is then made as before, but in the opposite direction.

3. "*Right half face*" is a turn equal to half that effected by a "*right face.*" The angle moved through is therefore forty-five degrees, or one-eighth of a circle, and the body then faces off in a diagonal direction. As this is but a very small turn, the right foot need only be slightly drawn back: about an inch is generally sufficient, and care must be taken that it be not drawn back too much, or the heels will not correspond after the turn is completed.

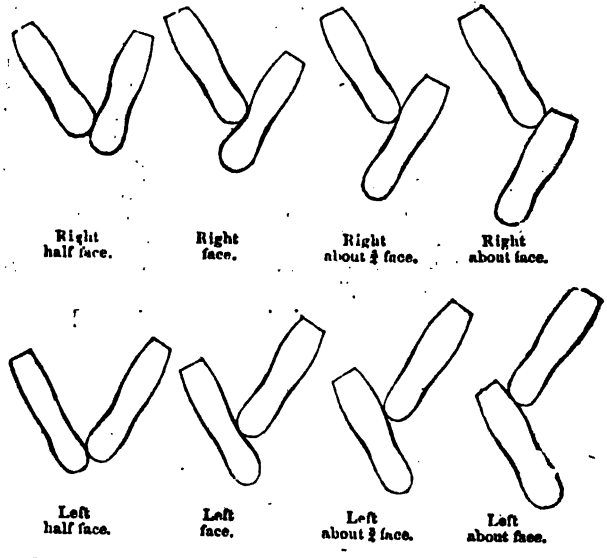
4. "*Left half face*" is just the reverse of the foregoing, and to effect it, the right foot must be *advanced* about an inch.

5. "*Right about face.*" This is a complete turn of half a circle, and it effects at once what would otherwise require two right faces. To prepare the feet for such a large turn, the right foot must be drawn back so much, that its toe may touch the left heel. At the word "two" the body must turn completely round to its rear, smoothly and without swinging, so as to preserve its balance. When this facing is completed, the heels will not be found closed in their proper position. This must therefore be done at the word "three," which constitutes a *third* motion, and between each of the three motions a sufficient pause is observed.

6. *Left about face.*" This facing is seldom used, as it effects just the same change of position as the last, but by turning to the left instead of to the right. The right foot is of course advanced as much as it was before drawn back.

7. "*Right about three-quarters face*" implies a turn equal to three-quarters of that effected by a *right about face.* It effects at once what would otherwise require a right face, and then a right half face. Perhaps the plainest way of illustrating all these facings is by reference to the eight principal points of the compass. Supposing a soldier to stand facing the north, a *right* or a *left about face* would carry him round so as to face the south. A *right face* would bring him to the east, and a *left face* to the west. A *right half face* and a *left half face* would respectively face the north-east and the north-west; and the *right about three-quarters face* would make him front to the south-east. To effect this last face the right foot must be drawn back more than for a right face, but less than for a right about; or so that the ball of this foot may touch the left heel. After having turned round the heels will not be found closed, but will require to be properly placed by a third motion, as in the right or left about face.

8. "*Left about three-quarters face*" is just the reverse of the last, and is effected by advancing the right foot so that its heel may touch the ball of the left foot, and then turning round in such wise that, if the face were before presented northward, it shall now face the south-west.



This figure shows the preparatory positions of the feet, necessary for each of the eight facings, in which it will be seen that the left foot never moves from its original position.

Among the facings may also be included the word "*front,*" at which the soldier, in whatever direction he may be turned, makes such a face as may bring him round to his *proper front*, by the shortest way. Thus, unless he be facing directly to his rear, there can be no doubt which way is the shortest; for a person cannot easily turn more than half a circle. But when the soldier is faced directly to his rear, the two ways of fronting (either by a right about or by a left about face) are both of the same length. In such a case it is a rule that on the word *front* being given, he must come to the *right* about.

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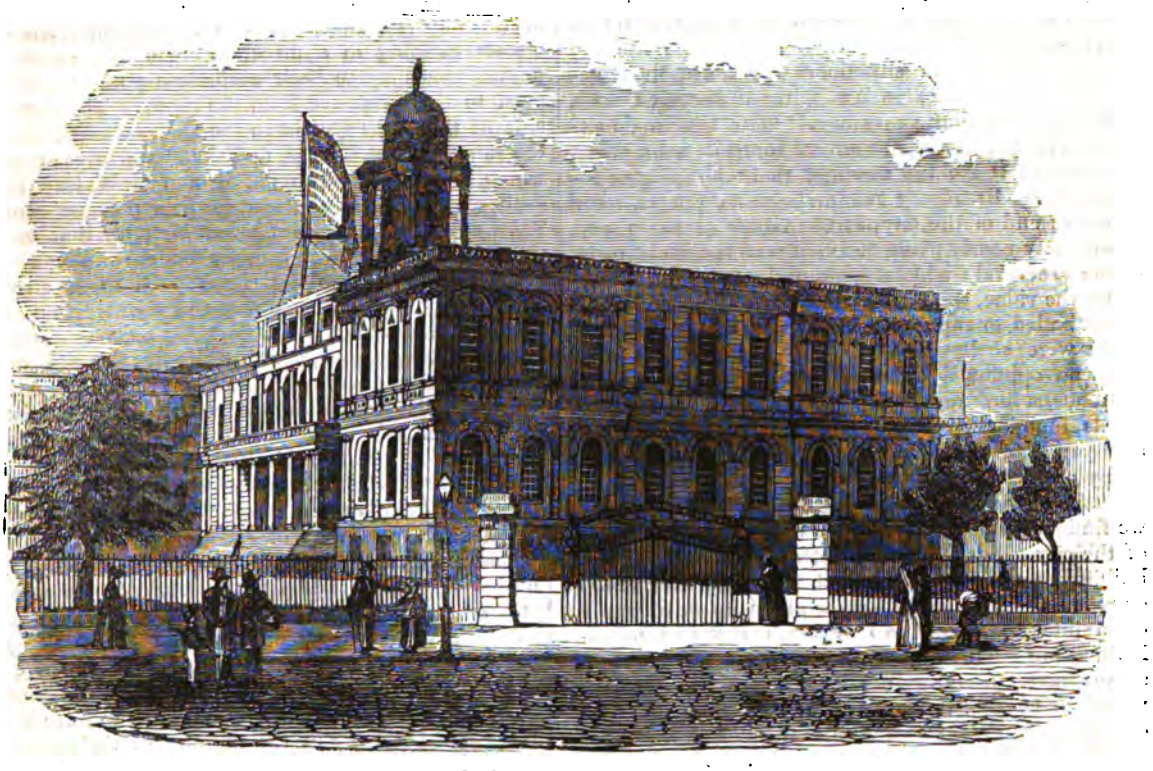

CITY HALL, NEW YORK.

THESE two cities, the largest and wealthiest in the United States, are, from their commercial character, and proximity to each other, most decided rivals. Although Philadelphia once led, and for a considerable period afterwards kept pace with New York, the increasing trade of the country naturally concentrating in the most advantageous situation, has given to the latter a preponderance in commercial affairs, which nothing short of some unforeseen and dire calamity, or some unnatural revolution in matters of state, will ever bring back to the former city.

In the early colonizing of North America, a portion of what at present constitutes the State of New York was settled by the Dutch; but before the city —which is now second to few in the Old World for the extent of its commerce—had become a place of much importance, the Dutch possessions in North America were ceded to the crown of Great Britain. The situation of New York is rather low, being built upon the southern end of what is called Manhattan Island, (the name originally given to it by the Dutch,) a strip of land about fifteen miles in length, but hardly two in breadth at its widest part. Though called an *island*, it is more properly a peninsula, since it is separated from the main land towards the north by a channel that is little more than a mere ditch. Manhattan is separated from the State of New Jersey by the North or Hudson River, and a narrow inlet of the sea, called the East River, communicating with Long Island Sound and the Bay of New York, bounds it on the east, and separates it from Long Island. At present the city extends from the south point of this strip of land (where there is a strong battery) about three miles northward, but the ground plot is laid out to a much greater extent, and here and there may be seen isolated buildings, many of them marking the corners and angles of future streets and squares, destined hereafter to be comprised within the bustle of this rapidly increasing city.

There are two approaches to New York from the sea; but that by Long Island Sound and the East River is little used, except for small craft and steam-vessels plying to different ports in the Eastern States. The other, and principal entrance, is at Sandy Hook, a channel lying between Long Island and the coast of New Jersey. It is somewhat exposed to the winds from the eastward, and on account of a bar or sand-bank, the entrance is attended with some danger and difficulty. *Within* the Hook is Raritan Bay, and here of a breadth of several miles, which breadth, however, decreases, until, at "the Narrows," the distance between the Long Island shore and this island is only nine hundred yards. After passing through the Narrows, the danger of the voyage may be considered over, and New York and its environs present themselves to view. The whole distance from the sea to the city is sixteen miles. Notwithstanding the vast extent of shipping connected with, and trading to New York, it has nothing like an enclosed harbour. But the anchorage between the eastern part of the

city and Long Island shore, which is here lofty, is both good and safe. The tides rise but a few feet on this part of the American coast, so were docks absolutely necessary for the security of the shipping, they could scarcely be made available. Buildings have already encroached considerably upon this section of the East River, and numerous small low wooden piers jut out into the water, for vessels to load and unload at; the spaces between them, forming a series of small basins, without gates, are called "slips," and are found exceedingly convenient for the general purposes of ships and shipping.

The older portions of the city do not present much taste or regularity in the buildings and streets, although great improvements have been made from time to time, particularly in situations where fires have occurred, the most extensive being that which took place three or four years ago. With the single exception of Broadway, however, there is not a street that would strike the stranger as in any degree remarkable. Broadway commences at the extreme southern end of the city, at the Castle Gardens, and runs pretty nearly along the centre of the island; but owing to several slight ascents and descents, in passing along the ridge, the view is never so extensive as one might be led to suppose. Formerly most of the side walks were sheltered by rows of trees, but of later years an opinion got abroad that these trees were a nuisance, a harbour for insects to breed in, that afterwards found their way into the houses, to the great annoyance of the inmates. In consequence of this, many of the older trees have been removed, but the taste for shade-trees seems again to be reviving, and we find many recently planted ones in various parts of the city. Along the old portion of Broadway the buildings are by no means either peculiarly splendid or regular. A row of tolerably large brick houses is often interrupted by two or three low and mean-looking ones, and after gazing with admiration upon some genteel marble-fronted residence, probably the very next buildings will prove nothing better than two or three paltry shops, of not half the elevation of their classical and aristocratic neighbour. From many parts of Broadway there is a gentle descent on either hand towards the rivers, but in the *newer* portions of the city, many of the cross streets are almost on a level. Although there are some other streets parallel, or nearly so, to Broadway, the cross streets are often neither straight nor at equal distances, presenting but very little regularity. In the new portion of the city the streets are straight and regular.

William Penn was the founder of Philadelphia, and before the building of that city was commenced, a regular plan had been suggested, which was afterwards strictly adhered to, and those that have contributed since his time towards making Philadelphia what it is at present, appear to have made no encroachments upon the regularity of the original plan. In most of the better order of streets, the buildings are more regular than in New York, and although the houses are neither large nor much ornamented, on the whole they present a highly respectable appearance. Except in a few public buildings, principally banking institutions, you see no marble fronts; but the flights of steps in front of several of the best houses, as well as the door and window-sills, are of white or veined marble. The houses are mostly brick: a very few have stone fronts, and in both these large cities a few of the original wooden buildings are still visible. In one respect there is a resemblance between these rival cities—they are both built upon ground somewhat sloping, and between two rivers, though their respective rivers have little resemblance.

Philadelphia extends from the Delaware river on the east—which separates it from New Jersey—to the Schuylkill on the west, the distance between these rivers, across the centre of the city, being nearly two miles. It is but for a moderate distance, however, and that in the middle of the city, that the ground adjoining the Schuylkill has yet been built upon, the great accumulation of building being on the side of the Delaware. Market-street, which extends in a direct line from river to river, is accounted the centre of the city, the streets to the north and south of it being parallel thereto, while those running parallel to the rivers, cross it at right angles. Though the plan of this city is simple, yet it is interesting. All the streets running in a direction north and south are named according to their respective positions, in regard to their distance from the rivers. Thus on the side of the city adjacent to the Delaware—excepting the range of warehouses, and the street in their rear, which, significantly enough, is named Water-street, —they are called *First*-street, (or front,) *Second*-street, *Third*-street, &c., up to *Thirteenth*-street, that being the adjoining one to a broad avenue, running along the centre or top of the ridge. All these streets necessarily cross Market-street and the streets parallel to it, the various sections lying *north* or *south* of Market-street being named accordingly; those towards the north being named *North* Third-street, *North* Fourth-street, &c., while the contrary sections have *South* appended to them, and are known as *South* Fourth-street, *South* Fifth-street, &c. Perhaps to have followed out the simplicity of this plan the streets crossing *east* and *west* should have been named after the letters of the alphabet, but in that case an inconvenience might have occurred when the number of streets exceeded the letters in the alphabet. At present the principal streets, running east and west, are named after the various sorts of indigenous trees common to Pennsylvania. Thus there is Chestnut-street, Pine-street, Mulberry-street, Locust-street, &c. But of late years there seems to have been some change of taste in the naming of their streets, or else they have outrun their *wooden* names, since we find many of the new streets evidently named agreeably to some whim or caprice, and many others after individuals, the original owners of the property, or those whose names are most popular amongst the American population.

While the city has been gradually extending in various directions, several villages once quite distinct from it (as was formerly the case with many villages now swallowed up by London) are now included within what may reasonably be considered its present limits; but the growth towards the north has somewhat exceeded that towards the south. The blocks of buildings formed by the streets crossing each other at right angles are called "squares." Hence a stranger who has been accustomed to the open areas of our own squares is occasionally not a little puzzled when he finds it necessary to inquire the way, or the distance to such or such a place: for where it is intended to define the route very particularly the party inquired of will direct him along such a street, a certain number of "squares," (not so many minutes' walk, or the fractional parts of a mile,) and then turn to the right or the left, as the case may happen to be, when a certain number of squares more will bring him to the place he inquired for. Should he ask for an explanation respecting the *names* of the squares he would be surprised to find that nothing had been meant except the *blocks* of buildings between the several cross streets.

Owing to its inland situation Philadelphia is not so

agreeably refreshed with sea breezes as New York during the summer season; the distance from the sea at the entrance of Delaware Bay being nearly 90 miles. It is, however, generally considered the more healthy city of the two, which in some measure may be owing to its streets being more open and cleanly, since the streets in New York bordering on the East River, at least that portion of them inhabited by low Irish and *coloured* people, are usually in a disgusting and filthy condition. But most of the large American towns are more or less unhealthy during the latter part of the warm season, which needs no other proof than a reference to the bills of mortality, and to the prevailing custom of removing to more salubrious situations during the hot weather by all who possess the means and whose presence can possibly be dispensed with in their callings or professions.

The river Delaware is fully a mile in width in front of the city, whither ships of the largest size can come close up to the quay to load and unload; but owing to a bar, and the exposed situation of the entrance into the bay, Philadelphia has been considered neither a safe port, nor one easy of access. Moreover, the channel of the river is winding, so that it used sometimes to occupy several days to complete the voyage after entering within the capes of the Delaware. This species of delay, however, has been partially remedied by the introduction of steam-boats, the application of which however is attended with considerable expense. Severe frosts occasionally interrupt the navigation of the Delaware for several weeks; but severe indeed must be the season that materially affects the Bay of New York. The approaches to both cities are strongly fortified.

The Schuylkill is a much smaller river than the Delaware; and though its channel is of considerable depth from where it enters its sister river (four miles below the city), still it is comparatively little used for shipping purposes. Immediately above the city its banks attain a considerable elevation, affording beautiful views, some of which are highly picturesque. By means of a lofty dam thrown across this river, a considerable head of water is obtained, and powerful machinery employed in forcing the water through the spacious pipes to the top of the lofty bank where it is received into a capacious reservoir from whence it is conveyed to various parts of the city. The Philadelphians are very proud of their water works; nor do they neglect to let their neighbours of New York hear of their superior supply of this necessary of life. It must be admitted that New York is but indifferently supplied with good water; for neither that yielded by the generality of pumps, nor that kept in tanks, is of a good quality; the only really pure water to be met with during the summer is what is brought by water-carts from a spring at a considerable distance, and hawked about the streets and sold by the gallon. But the rivalry of these two cities extends to things edible, as well as to matters local and commercial, the prejudices of the parties being often carried to extravagant lengths—lengths occasionally assuming the ridiculous.

In consequence of the colony of Pennsylvania having been founded by William Penn and his followers, Philadelphia is not unfrequently denominated "the city of the Quakers;" and although the population at present comprises religious sects of various denominations, the Quakers, as to number, rank in the third or fourth order, but as regards wealth and respectability they are second to none.

For some time Philadelphia was considered as the capital of the United States, and the National Congress was held here until the year 1800; when, agreeably to an Act of Congress passed eight years before, the government and the national legislative bodies removed to the City of Washington.

Within the last fifteen or twenty years the internal improvements with which Philadelphia is connected or interested in, have been carried to a very great extent; a few of the leading ones may be enumerated. Several years ago a rapid communication with New York was completed—being partly by steam-boat and partly by railway; the distance between those cities, by the old route, was ninety-six miles. The Delaware river has been rendered navigable nearly to its source—partly by improving the channel, and partly by opening canals to avoid the more formidable obstructions of the river. A canal has also been opened along the entire length of the valley of the Schuylkill, and another from the Delaware to the mountain region in the interior of the state; so that through these channels the city is not only supplied with an abundance of coal, but also with the produce of the country. Both a canal and a railroad have been made between the Delaware and Chesapeake Bays, affording convenient and expeditious communications between this city and Baltimore,—and thence by railroad to Washington City. But the greatest of these public works is the communication partly by railroad, and partly by canal, between this city and Pittsburgh on the Ohio,—from whence there is a steam-boat communication with the entire valley of the Mississippi. This route passes over the Alleghany mountains; the whole distance to Pittsburg being considerably over 300 miles.

With all these advantages, (and several others not enumerated) still Philadelphia cannot successfully compete with its formidable rival, although they undoubtedly very much tend to add to both its trade and resources.

The commercial importance of New York is by no means derived exclusively from its advantageous position as a sea-port; since, besides its natural advantages, it at present enjoys the privilege of vast internal improvements.

Besides that fine navigable stream, the Hudson, which stretches northward into the very heart of this fine and large state,—there are canals communicating with the lakes Erie, Ontario, and Champlain, and thence with the river St. Lawrence and both the Canadas. Some of the canals are connected with water communications passing through the states of Pennsylvania and Ohio, and thenceforward to "the Far West." By these means the productions of extensive regions, far into the interior, are brought to New York, to be exported or consumed as the case may be; and in return large quantities of merchandize are supplied to the inhabitants of the inland towns and cities, as well as to many a far-distant settlement. But there are various other works of general improvement, two of which, and not the least important, are the Delaware and Hudson, and the Morristown canals. The first of these connects the Delaware and Hudson rivers, the latter the Delaware (near the mouth of the Lehigh) and the Passaic river, and consequently with the Bay of New York. By these channels large quantities of coal find their way to this city; much of which is re-shipped and sent to various parts of the Union.

The steam-boats plying to and from New York are, probably, quite as numerous as those frequenting the waters of Old Father Thames. Besides the ferry-boats across the two rivers (all steamers, and no bridges) at the various ferries, there are vessels plying between this city and every sea-board town in the Eastern States; as well as to every sea-port towards the south from

hence to New Orleans on the Mississippi. Several of the boats frequenting the metropolitan rivers are splendid vessels, and elegantly fitted up; but the most admired of them are scarcely such beautiful crafts as the North-river steamers. For besides the large size, and beautiful proportions of these vessels, no expense is spared in embellishing their cabins and dining rooms; and in addition to those below deck, some of them are provided with handsome *deck*-cabins, and over these again are galleries covered with tasteful awnings where the passengers may lounge or take exercise, and enjoy at the same time the summer breeze that is scarcely perceptible in the lower parts of the vessels.

The most imposing view of New York is from the south. In sailing up the bay you have the islands—some of them fortified and garrisoned—in the foreground of the picture, the North and East rivers stretching off to the right and left; while the city is seen somewhat indistinctly through "the forest of masts," and the various-coloured flags of all the commercial nations under the sun; the chief defect being that you behold the narrow *end* of the city, consequently leaving too much of the picture to be completed by an effort of the imagination. From the lofty heights of Long Island, near Brooklyn (which by-the-by is a respectable-sized city already), there is an extensive view of New York across East River; but from thence you look too much directly at the broad side of it, although some of the islands on the left are embraced in this view.

The city of Philadelphia is seen to the greatest advantage by the traveller who approaches it from Trenton or Bordentown, by the route of the Delaware. For several miles before reaching the city, the banks of the river, particularly the right hand one, become both interesting and beautiful; while directly in front the buildings of the city are seen rising like an amphitheatre in the distance, with a moderate amount of shipping in the fore-ground, but sufficient to give it a commercial character. For awhile you discover no outlet for the noble stream down which you float,—but as you approach nearer the city you find that the river, instead of continuing the same course, (which would take it directly through the heart of the city,) turns with a graceful sweep to the left, embracing a low grassy island, as it inclines to the flat shores of New Jersey. In this view of Philadelphia the ground ascends from the river just sufficiently to show the successive ranges of buildings rising one above the other; but there is but little diversity in the general appearance, there being but few edifices of an imposing character, and but *two* steeples or towers worth notice are seen "pointing to the skies." In this respect the approach to New York has the advantage, for there five or six buildings of this character are embraced in a distant view of that city.

In the year 1810 those rival cities were nearly upon an equality as regards population; for at that date the census gave New York a population of 96,000, and Philadelphia 92,000 inhabitants; and taking into consideration the fact that in giving the population of the former city the whole of the inhabitants in the county of New York, that is, upon the island of Manhattan, are embraced,—probably the number of souls actually in the city did not outnumber those of Philadelphia. In 1820, according to the census, the population of Philadelphia had only increased to 102,000, while that of its rival had nearly reached 124,000. But during the intervening period it should be borne in mind that there had been a war of two or three years' duration between the United States and Great Britain, by which, there can be no doubt, the increase of population was very much retarded. In 1830 the population of New York was given at something over 200,000; while that of Philadelphia (exclusive of two or three contiguous villages) was 111,000. In 1836 a committee of the council of New York estimated (but mark—it was but an *estimate*) the population at near 300,000; of the population of Philadelphia we have no returns of so recent a date, but the city has become considerably extended, and the number of inhabitants no doubt considerably increased, since the last census was taken.

THE EMANCIPATION OF LUNATICS.

FIVE and forty years ago, lunatics were enchained throughout Europe. Eighty lunatics at the Bicêtre, an asylum for insane persons at Paris, were unchained by Pinel, in 1794, and the general treatment was henceforth improved; thongs and scourges were no longer delivered out to the keepers; and the result was, that many before deemed incurable recovered, and that all the rest became quieter and more easily governed. France was the first nation to offer the spectacle of nearly three thousand lunatics kept in confinement (in and near Paris) without chains, without blows, and without unkind treatment. Honour to Pinel! who, first of all in Europe, raised his voice against these atrocities, and pointed out the excitements they produced, and contrasted them with the calm that ensued on kind and compassionate treatment. In England, and indeed throughout Europe, the same benign spirit has manifested itself, and America has practically enforced the same great lessons of philanthropy. In Dr. Woodward's elaborate Report of the State Lunatic Hospital at Worcester, United States, it is said that of 230 patients, only *one* was, at the time of the inquiry, in personal restraint, and that under a system of leniency, "the furious and violent had become docile and quiet; the filthy and degraded, cleanly and respectful."

The claims of the insane on their happier fellow-creatures are many and sacred. The effects of the varied forms of misery, of privation and neglect, of abandonment, physical and moral, are concentrated in the madhouse. Poverty there has done its worst: and man is reduced to a state from which, too often, there is no relief but death. It may be thought that madness, like death, knocks alike at the palace-gate, and at the labourer's hovel; but even more heavily and more darkly does the misery which it flings over devoted households fall on the poor. Sudden accidents come upon the working-man, too, in which a fall, a blow, a wound, immediately injures the brain, and incapacitates the honest labourer, yet in the prime of life, from all future profitable work: and who can see and talk to this victim of calamity, in the quiet moments and intervals of his malady, when his anxious thoughts turn with honest faith to his home, to his wife, to his children, without commiserating that ruined humble household: not forgotten, but no longer supported and defended by the unfortunate husband and father, who must linger out his life in an asylum!

Insanity appeals to the heart on every side, and happily, every act of benevolence produces its palpable good; under kind management hope revives, even in the cell, and on the bed of straw, and smiles relight the faces of those before forlorn and dead to every joy: by soothing care the frantic outrage of the maniac is abated, and the unspeakable wretchedness of the melancholic diminished. Every word, every look of kindness, finds its way to some pained heart, and does its blessed office. The great end, too, of all

these exertions,—the restoration of mental power, is infinitely noble. The physician feels that to restore health of body is an elevated art, the value of which those best can appreciate who have ever wanted the blessing. The art of the mental physician is to restore alacrity of attention, readiness of memory, warmth of imagination, accuracy of judgment, and the power to will and to do; the loss of all which is the most grievous part of sickness.

These principles are yet of recent acknowledgment, but of stability and truth; the blessed product of that enlightened and universal charity which, although it has not yet flourished equally in every age and clime, has its imperishable root in Christian institutions.

[Abridged from the *British and Foreign Medical Review.*]

COURTESY.

AN ATHENIAN STORY.

In Athens, ere its sun of fame had set,
Midst pomp and show the gazing crowds were met,
(Intent for ever upon something new,)
The mimic wonders of the stage to view.
Lo, where the wide extended Circus spreads,
In galleried ranks, its sea of living heads,—
Ranged in close order, rising row on row;
—The void arena claims the space below.
The seats were filled. But ere the shows began,
A stranger entered: 'twas an aged man.
And while he sought a place with aspect mild,
The polished young Athenians sat and smiled;
Eyed his confusion with a sidelong glance,
But kept their seats, nor rose on his advance.
Oh! for a burning blush of deeper hue,
To mark the shame of that self-glorious crew.
How poor the produce of fair Learning's tree,
That bears no fruits of sweet Humility!
The growth of arts and sciences how vain,
In hearts that feel not for another's pain!
Not so the Spartan youth, whose simpler school
Instilled the plain but salutary rule
Of kindness! and whose honest souls preferred
Truth to Display—Performance to a Word.
They in the Cirque had their appointed place,
Apart from Attica's distinguished race,
And *rose* with one accord, intent to prove
To honoured age their duty and their love.
Nor did a Spartan youth his seat resume,
Till that old man found due and fitting room.
Then came the sentence of Reproof and Praise,
Stamped with the sternness of the ancient days.
For standing forth amidst the assembled crowd,
The venerable stranger cried aloud;
"Th' Athenians learn their duty well: but lo!
The Spartans practise what th' Athenians know!"
The words were good; and, in a virtuous cause,
They justly earned a nation's glad applause.
But we have surer words of precept given,
In God's own Book—the words that came from heaven:
"Be kind*." "Be courteous†." "Be all honour shown‡."
"Seek others' welfare rather than thine own§."

M.

* Eph. iv. 32 † 1 Pet. iii. 8. ‡ Rom. xii. 10 & xiii. 7.
§ 1 Cor. x. 24.

MATERIALS FOR THE TOILETTE.
No. IX.

On Perfumes.

In our last paper we spoke of cosmetics, as being, in the opinion of many persons, necessary appendages to the toilette. We now proceed to treat of some of the perfumes which have become so universal and indispensable amongst us. Traces of their early use, both in religious worship and in ordinary life, may be discovered in the sacred Scriptures, and the classing together of "gold frankincense, and myrrh," as the precious gifts of the Eastern sages on the birth of our Lord, is sufficient to prove the high estimation in which they were held at that time.

Among the Greeks the use of perfumes was, in some measure, restricted by their laws, and they deemed it effeminate and luxurious to employ them. In the primitive ages there were no sacrifices offered to their gods, in which odoriferous trees and herbs did not largely enter. In later ages, the offering commonly consisted of frankincense, or some perfumes, but it was a long time before frankincense was used; in the Trojan war it was unknown, and instead of it the Greeks offered cedar and citron. The Spartans were not allowed to use baths and perfumed ointments, except on particular days of the year, for the river Eurotas was expected to supply the place of the former, and exercise that of the latter. The Greeks were in the habit of perfuming their wine with myrrh, origanum, aromatics, fruits, and flowers.

The use of perfumes was carried to greater excess among the Romans; the stores of Arabia were exhausted through the extravagance of some of the emperors, and even among the soldiery the most ridiculous care was bestowed on the perfuming of their persons, their standards, ensigns, &c. Perfumes were also largely employed in their funeral rites. The pile on which the body of the deceased was laid, resembled an altar, except that it was much higher. There were four compartments rising above each other. The lowest contained straw; the second from the ground, flowers; the third, aromatic herbs and other odoriferous things; the fourth, or highest, the most precious clothes of the deceased. Liquors, ointments, and herbs of the choicest description, were likewise thrown on the corpse.

Great importance and many virtues are ascribed to perfumes by our old herbalists, such as clearing the brain, enlivening the spirits, &c., and there can be no doubt that in many cases and constitutions, the fragrance of peculiar plants may have a cheering and refreshing effect. In close and confined situations, however, they may be expected to produce a contrary result, for abundant ventilation and perfect cleanliness are necessary to the wholesome and safe enjoyment of perfumes.

The cheapness of our perfumery at the present day, allows the gratification derived from the use of fragrant oils and essences, to be much more generally attained than it could have been in former times. Herbs, drugs, and flowers, are made to yield their aromatic odours for our use. Among the former we may mention marjoram, sage, thyme, lavender, &c., while of drugs, frankincense, mace, cloves, benzoin, storax, and many others, are held in great esteem. Orange-flowers, jonquils, jessamine, roses, violets, and other fragrant flowers, are also largely employed, and thus, by a judicious use of some of these various essences, we may impart to our dwellings or our dress, the delightful odours of our favourite flowers, at any period of the year. Otto of roses, which is the most costly of all the perfumes, and the most powerful, is made in India, and very highly esteemed. It is said that the genuine otto is not prepared by distillation, but by putting a quantity of carefully picked rose-leaves into a clean jar, or cask, with just enough water to cover them, and then setting the vessel in the sun for a few days. A scum forms on the surface of the water, which is removed by a piece of cotton, and is the valuable otto itself. Rose-water is distilled from fresh rose leaves gathered in dry weather, and when the flowers are in full perfection. The petals are carefully separated from the stalks and calyxes, and if a very fragrant water is required, the first product from

them should be returned to the still and half its bulk drawn over. Rose leaves may be preserved for distillation by being salted; they will be found to retain their odour, and the water distilled from them will nearly equal that obtained from the fresh petals. If the bottles, in which rose-water is kept, are not perfectly clean, it will turn sour, and indeed, with all precautions, it is very apt to do so. Some persons, on this account, have added a small quantity of spirit of wine for its preservation, but it is not desirable to do so, since the stimulating property thus imparted, will render the rose water unfit for the use to which it is very frequently applied, namely, that of bathing the eyes.

The essential oil of lavender constitutes a most agreeable perfume. The best is obtained by distillation of the flowers of the plant: where the leaves and stalks are added, the quality is inferior. Lavender water, as it is generally prepared, is not a distilled spirit, but an alcoholic solution of oil of lavender, to which other scents are occasionally added.

The essential oil of orange-flowers is a very fine, delicate, and expensive perfume, often adulterated with inferior matters.

The essential oils of bergamot, orange, and lemon, are obtained by expression from the peel. The bergamot is a fruit resembling both the orange and lemon, but it is of a larger size than either, and produces an abundance of oil.

The oils of jasmin and tuberose are of so delicate a nature, as to be impaired by the most careful distillation. The perfumes of these flowers are, therefore, obtained from them by steeping the blossoms in perfectly inodorous fixed oil, which becomes imbued with their fragrance, and from which the odour may be transferred to alcohol, so as to form a spirituous essence. The essence of jasmin forms a much more pleasing perfume when mixed with other substances, than when used alone. Several of the perfumes here mentioned, enter into the composition of the much-admired Eau de Cologne. The following recipe may be acceptable to such persons as feel disposed to prepare an imitation of it for their own use. Take an ounce of each of the following essences; bergamot, lemon-peel, lavender, and orange flower, half an ounce of essence of cinnamon, fifteen ounces of spirit of rosemary, the same quantity of spirituous water of melisse, with seven pints and a half of alcohol. Mix the whole together, and let the mixture stand for a fortnight. Then pour it into a glass retort, the body of which is immersed in boiling water, contained in a vessel placed over a lamp, while the beak is introduced into a glass reservoir. By keeping the water to the boiling point, the mixture in the retort will distil over into the receiver, which should be kept cold by being covered over with wet cloths. In this manner will be obtained a good substitute for Eau de Cologne, which in its pure and genuine state, is manufactured at one place only in the world, and that is Cologne, as the name of the water implies. The process by which the genuine article is made, still remains secret, although the principal ingredients employed have been discovered by analysis. There are three animal substances which greatly improve and strengthen other perfumes, though they are in themselves of such a penetrating and overpowering odour, as to be scarcely endurable; these are musk, civet, and ambergris. Musk is a concrete substance obtained from the musk-deer of the East, and also from the musk-rat, a native of America. It is imported in the natural bags in which it is found in the animal, about the size of a pigeon's egg. Genuine musk, from China, is of the colour of an old brown nutmeg, rolled up in little round friable pills. The musk bags, however, are sometimes cut open before they leave China, part of the contents abstracted, and the deficiency made up with dried blood, rolled up into pills to imitate the true musk. Other musk dealers leave the bags in a damp place to increase their weight, and this injures the quality of the musk. It is sometimes greatly adulterated with spikenard, chocolate, aloes, nutmeg, storax, &c.

Ambergris comes from Holland, Africa, Brazil, and the East and West Indies, where it is found floating on the sea. It is an animal substance, supposed to be formed through disease, in the intestines of the spermaceti whale. That which is gray, very light, and easy to break, is the best. It is sold at an extremely high price, and is therefore the more frequently adulterated, but persons having once become acquainted with its peculiar odour, will not easily be imposed upon, and by melting a small portion of the substance, they will find the odour emitted to be a sufficient test of its genuineness. An alcoholic solution of this substance, called essence of ambergris, is sold by perfumers, and when used in small quantities with other perfumes, it yields a delightful perfume.

Civet is a fragrant substance procured from the civet cat. It is of a yellow colour and unctuous consistence, but becomes brown by keeping. The odour, like that of ambergris, is not fit to be used alone: with other perfumes it is exquisite.

A small quantity of camphor greatly improves the fragrance of many perfumes, but either this, or the three last mentioned articles, will destroy the delicacy of the scent, if used in too great abundance. The usual method of perfuming linen is to lay sweet bags in the drawers which contain it, and these may be filled with dried and pounded blossoms of any fragrant flowers, with the leaves of mint, balm, southernwood, ground ivy, laurel, hyssop, rosemary, marjoram, also dried and pounded spices reduced to a powder, orris root and fragrant balsams may be likewise added, and if agreeable to the taste of those who are to use the perfume, musk, civet, or ambergris, will give power and additional sweetness to the whole. It is recommended that sleeping apartments and bed linen be never perfumed, for owing to the comparative want of ventilation in those rooms, the practice is likely to prove injurious.

We have thus described a few of the favourite perfumes, but we are not by any means disposed to recommend a constant use of them; on the contrary, we may venture to say that persons who waft around them at every step, a degree of fragrance which

Makes some sick, and others *à la mort**,

have forgotten the legitimate use of perfumes, and while they may be gratifying their own sense of smell, they show little consideration for those whose more delicate nerves can ill support such a tide of sweetness. Leaving it then to the taste and judgment of our readers to make a moderate and proper use of perfumes, as well as of the other materials for the toilette, and recommending them to abridge, as far as is consistent with neatness and propriety, the time devoted to the decoration of the person, in order that they may gain time for the adorning of the nobler mind we conclude the present series of papers.

* COWPER.

DUELS are but illustrious murders. It is an imperious crime, which triumphs both over public revenge and private virtue, and tramples boldly upon the laws of the nation, and the life of our enemy. Courage thinks law here to be but pedantry, and honour persuades men that obedience here is cowardice.—MACKENZIE.

GALLANT EXPLOIT IN 1745.

About twenty years ago, a venerable and hale-looking peasant who could remember the irruption of the Jacobite clans in 1745, was fond of basking in the sun and, with the garrulity natural to old age, relating anecdotes of old times to such listeners as he could find in the gardens of his native parish, Cramond, situated on the firth of Forth about five miles north-west from Edinburgh. He said he was a "callant" that is, stripling, when the Highlanders crossed the country on their way to the Scotch metropolis, which, with the exception of the castle, surrendered at their approach. His father occupied at that time one of those small holdings, then so common, but which are now merged in the extensive parks and farms which now distinguish the Lothians. The invaders, he said, were an ill-clad and half-starved-looking, but by no means ferocious soldiery; and, as a specimen of their manners, he related that a party of them happening to pass his father's door as his mother was busy at the churn, they entered, making signs for food and chattering Gaelic, and unceremoniously helping themselves to spoons, emptied the contents of the churn into their own stomachs. A pair of new Sunday shoes was also taken from a shelf, but on the principle that exchange was no robbery, a a pair of well-worn *brogues*, shoes rudely made of untanned hide, was left instead.

But what the old man was fondest of telling was an exploit which gave no small proof of the courage and military skill of the young farmers of the parish. The "Pretender" before leaving Edinburgh on his romantic expedition into Derbyshire, wanted to increase his cavalry, and with this view sent parties, consisting chiefly of officers, to levy horses in the country round his head-quarters. One such party had arrived at Cramond, and had collected the best horses in the parish at a large square house in the centre of the village, into which they then went themselves to repair the fatigues of their search with a substantial dinner and probably somewhat over-copious potations. Meanwhile the young farmers were resolved that their best horses should not be taken away without an attempt at rescue.

The neighbourhood was by no means so favourable then as it is now, for the execution of such a project. It was then generally marked by the bareness which Dr. Johnson has done so much good to Scotland by satirizing. What is now the richly wooded-domain of Dalmeny Park, was then divided into about forty farms each distinguished by a few old trees. Barnbougle Castle, an ancient seat of the Mowbrays, once a powerful family in those parts, stood out in grim and lonely grandeur, approached by long avenues of oak now exhibiting symptoms of decay, and surrounded on three of its sides by a vast beach of dazzling brightness, from the quantity of minute bivalve shells cast upon it by the tide. Muirhouse, on the other side of the Almond, a beautiful stream which nearly bisects the parish, was then, as its name imports, a house on a moor, though now embosomed amid large and thriving trees and the richest cultivation. On the whole, instead of the leafy luxuriance which has been poured over the landscape by the hand of modern improvement, there was then so little cover to conceal the approach of an assailing party, that the Highlanders enjoyed their good cheer without the least apprehension of being interrupted. Bare, however, as the neighbourhood was, one spot presented an advantage of which the rescuing party speedily availed themselves. The precipitous banks of the Almond were then as now fringed and tufted with trees and bushes, among which the gallant farmers contrived to muster with what arms they could find, and sallying out from this rendezvous, they at once surrounded the house where the partisans of a dynasty for which they had no affection, were securely regaling themselves. So complete was their success that they disarmed and made prisoners of the whole party, sent them off in boats to his Majesty's sloop of war, the Fox, then lying in the Firth, and left not a man to return to Edinburgh and relate the mishap that had befallen the expedition. The horses were of course recovered.

EARLY GRAY HAIRS.

O'er my head, e'er yet a boy,
Care has thrown an early snow;
Care, begone! a steady joy
Soothes the heart that beats below.

Thus, though Alpine tops retain
Endless winter's hoary wreath;
Vines, and fields of golden grain,
Cheer the happy sons beneath.——Penrose.

What can limit the excursive flight of human curiosity? It dives into the bowels of the earth, explores the mine, and speculates on the formation of the world itself. The sea forms no obstacle to its career. It visits the equator and the poles, and circumnavigates the globe. Nor does it take a cursory flight only, which seems merely to measure space,—it pauses to meditate and to inquire. There is not an animal that traverses the desert, there is not an insect that crawls on the ground, there is not a flower that blooms in the air, there is not a stone cast carelessly along our path, but it stops, and interrogates, and forces to declare its nature. You behold it scaling the heavens, measuring the magnitudes and distances of the celestial bodies, and even determining their weight. In short, every sound, every motion, every attitude attracts its attention. And shall man, while he thus casts an inquisitive eye on every thing around him, be incurious only about himself? Shall the lord of the lower world busy himself in acquiring a knowledge of the properties, habits, and functions of the beasts which perish, while he is careless about the qualities of that superior mind which has elevated him to the rank of their master, and which betokens a dignity and a destination far beyond the limits of their nature? Shall he immerse himself in the contemplation of corporeal beings, and never once inquire into the operations of that finer spirit which actuates himself, and makes him to be what he is?——Young.

WILD BEAST TAMERS.

The Van Amburghs of the present day are but disciples of an old-established school:—the posterity of the "Belluari" of the ancients. According to Pliny's report, there were men of this craft who tamed wild beasts so effectually as to lead them about with garlands of fig-leaves; and long before his time, as may be reasonably inferred from antique sculptures, in which Bacchus is represented riding in cars drawn either by igers, leopards, or panthers, the art of disciplining wild beasts must have been practised. One of the severest laws of Budhism enjoins its votaries "to feed an old sick tiger with their own blood;" whence some have concluded, that the Indians were in the habit of domesticating that animal. There can be no doubt that the Mexican priests were masters of this craft, and took much pains to fling an air of mystery over their appliances: for this purpose they prepared an ointment, of which the ashes of poisonous reptiles were a constituent part, and burned it upon the altars dedicated to their idols; these ashes were finely powdered in a mortar, and mixed with tar, hemlock, tobacco, and other narcotic drugs. The compound so obtained, endowed them, as they pretended, with the power of commanding lions and tigers to obey them.

In Africa, too, the taming of wild beasts has long been practised. The Emperor of Morocco has large open dens at Fez, where tigers and lions are tended by Jewish keepers, who use nothing but a light cane to keep them under; and the Pashas of Egypt have lions domesticated in their Harem, a splendid specimen of which was presented to the King of France in June last by Mehemet Ali. The Duke de Choiseul, minister to one of his predecessors, Louis the Fifteenth, had a favourite tiger-cat constantly in his cabinet; and there have been remarkable instances in the Botanical Garden at Paris of the extent to which the power, assigned to man over the brute creation, may be carried.

An instance of this kind occurred in 1801 with respect to a lion and lioness which had been sent as a present from the Bey of Constantine to the French sovereign. Cassal, their keeper, being absent from illness, they were committed to the care of one of his colleagues: the change did not appear to affect the female, but her mate retired to the corner of his den, where he sullenly laid himself down, refusing his new attendant's good offices, and by his low, suspicious growl giving him pretty plainly to understand that he would be glad to dispense with his attendance. He seemed to entertain the same feeling towards his consort; at least, he ceased to take any notice of her. There was an expression of uneasiness and suffering about the lion, which indicated that he was sick, and none dared approach him. Cassal at last recovered sufficiently to be enabled to resume his duties, and being desirous to give his noble friend an agreeable surprise, crept softly up to the bars of his cage and laid his face beside them; as soon as the animal discovered him, he sprung from the back of the cage, stroked Cassal with his paws, licked his hands and face, and howled with delight. The lioness evinced equal joy at his return; but the lion drove her back, angrily refusing to allow her to partake of the man's caresses. Cassal, seeing that a contest was likely to ensue between the animals, entered their den, and having allayed their rage against one another, caressed and received their caresses by turns. He was accustomed to walk into their cage whenever he listed—speak to the male or female alternately with great kindness—flatter them by gentle arts, and stroke and kiss them by the mane or neck: at his command they would separate and each retire to the distinct apartments allotted to them in the den, or they would lie down on their backs, stretch out their paws, and allow him to show their immense claws to the bystanders; or upon his giving them a sign they would instantly lie down upon their backs, throw out their paws, open their huge jaws wide and display their formidable masticators; the only reward he bestowed upon them for their obedience being a permission to lick his hands.

Martin, too, was another famous tamer of wild beasts, and used to amuse his audience by driving tigers and lions to exasperation, and then showing how complete a mastery he had acquired over them even in their savage moments. This man had a young tiger, who used to skip about among the spectators, lick their hands, and play with a little girl of six years old whom he brought with him. He has escaped unscathed from his hazardous craft, and retired into domestic privacy upon its fruits.

The feats of Van Amburgh, who was born at a little town in the county of Duchess, Kentucky, in July, 1811, are too fresh in the recollection of most of our readers to need any narrative from us. S.

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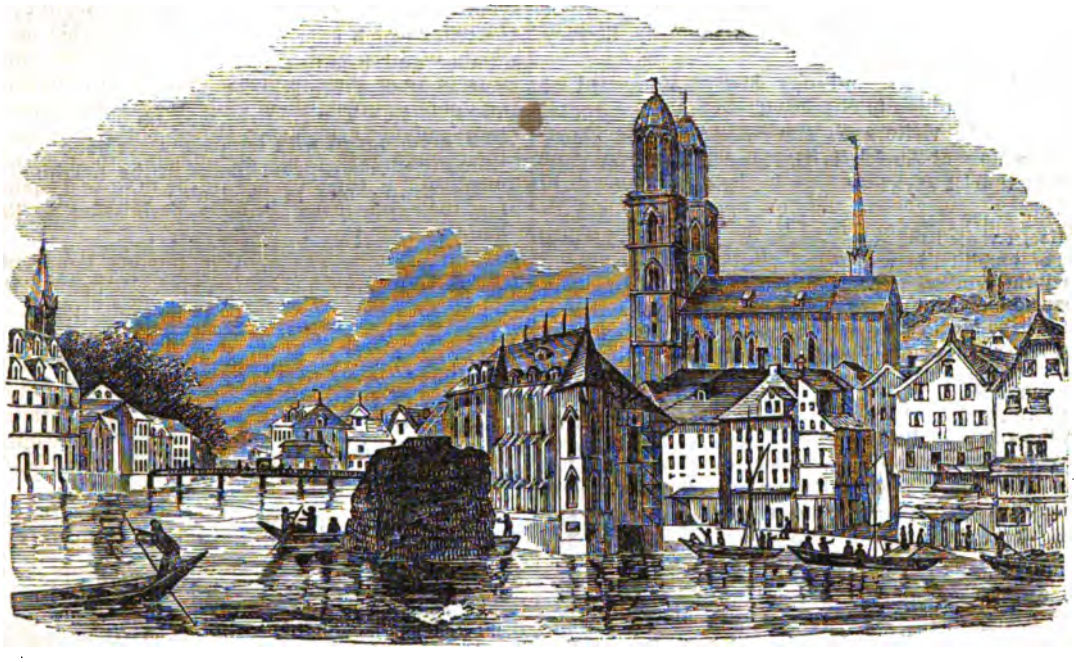
ZURICH, IN SWITZERLAND.



ZURICH

Zurich is the name of a town, and of a lake on the borders of which it is situated, in Switzerland, as also of the Canton which contains both the town and the lake.

The *Canton* of Zurich is at the north-west part of Switzerland, and adjoins the Duchy of Baden: it contains about a thousand square miles, and a quarter of a million inhabitants. Its surface presents a pleasant alternation of hill and valley; but not many of those magnificent scenes which distinguish many parts of Switzerland. The climate is mild, and the soil fertile and well cultivated. Rich pastures and extensive orchards abound, together with fine tracts of wooded country. Corn, wine, cattle, butter, cheese, cotton, silk, linen, woollen, and leather, are the chief products, agricultural and manufacturing. The inhabitants are of German origin, and, with the exception of two societies, are Calvinists. The Government was formerly a mixture of the aristocratic and the democratic; but it was remodelled in 1831, by which the legislative power was vested in a council of two hundred and twelve members, twenty five of whom formed an executive council, and court of final appeal. Large estates are sometimes to be bought; but smaller ones very rarely, because every one in possession of a few acres of land, hopes some day or other to build a house upon his property. A tenth of the produce is claimed by the government in the form of taxes. In this Canton, as well as in some others in Switzerland, every individual is obliged by law to insure his house; the sum paid for which is, however, very trifling,—ten shillings for one thousand pounds.

The *Lake* of Zurich is one of the most picturesque and beautiful in Switzerland. It extends, in the form of a crescent, chiefly through the Canton of Zurich, but partly also between those of Schweitz and St. Gall. It is divided into two parts by the Strait of Rapperswyl, a quarter of a mile over, crossed by a bridge: in other places the breadth varies to nearly five miles; and the length is about thirty. The lake is surrounded by a populous and well cultivated country, and the prospects on its banks are richly varied. Behind and above the hills which enclose it, loftier summits rise gradually higher and higher, till the eye finally rests on the glaciers of Glarus, Schweitz, and the Grisons. The lake, for several hundred yards from its banks, is seldom more than from six to twelve feet deep: it teems with fish, which, owing to the extreme clearness of the water, are seen in all their number and variety. The Lake of Zurich has been termed the Winandermere of Switzerland.

The *town* of Zurich is one of the most important in Switzerland. It is situated on the river Limmat, at the north extremity of the lake, and in a narrow valley between hills; its distance from Constance being 36 miles, and from Berne 55. Its situation is exceedingly pleasing, although the houses of the town itself are old-fashioned. Few places of the size of Zurich, and of its limited population (14,000), have surpassed it in the cultivation of literature. For five centuries it has been a town of literary distinction, and has numbered among its natives the names of Conrad Gesner, Solomon Gesner (the author of the *Death of Abel*), John James Gesner, Lavater, Hirzel, and Pestalozzi. The city library contains as many as seventy thousand volumes, as well as portraits of all the chief magistrates of the place.

Among other public buildings in the place are, a school for deaf and dumb, a school for the blind, a society of physics, economics, and natural history, a military school, a medical seminary, &c. The tower of Wellenberg is situated in the middle of the river Limmat, and is used as a felons' prison: in former times it enclosed within its walls, the Count Hans de Habsbourgh, the Count of Rapperschwyl, and many other important state prisoners. There is an academy of artists; an academy of music; a society called the Swiss Society of Public Utility; and several schools for teaching languages. There are two newspapers published in Zurich, one appearing weekly, the other twice a week; and there is also a monthly literary journal.

Almost every town and city has some record of by-gone days which is cherished by the inhabitants, and shown to visitors as the "lion" of the place. One such lion at Zurich is the bow of William Tell. A recent tourist says:—

Among other places pointed out to strangers as worthy of notice, I visited the Arsenal, where one may receive a lesson of humility, in attempting to wield the swords, and to carry the armour, borne by the warriors of other days. I of course handled the bow said to be the bow of William Tell; and the identical arrow that pierced the apple is also shown. I cannot conceive of what materials the sinews of that distinguished patriot were made; for the degenerate men of our time are obliged to use a machine, with the power of the lever, to draw the cord even half way to the point at which the arrow is discharged. There is a vast collection of ancient armour preserved, and modern equipments for more than all the able-bodied men in the Canton.

In the cultivation of their land, the inhabitants of Zurich are spoken of in high terms by travellers. It is impossible to look at their fields, gardens, hedges, trees, flowers, or domestic vegetables without perceiving proofs of the extreme care and industry that are bestowed upon the cultivation of the soil. If, for example, a path leads through or by the side of a field of grain, the corn is not, as in England, permitted to hang over the path, exposed to be pulled up or trodden down by every passer by: it is everywhere bounded by a fence; stakes are placed at intervals of about a yard, and boughs of trees are passed longitudinally between them. In the gardens, which around Zurich are extremely large, the most punctilious care is evinced in every production that grows. The vegetables are planted with great accuracy; and neither weeds nor stones are to be seen among them. Plants are not earthed up, as with us, but are planted in a small hollow, into each of which a little manure is put, and each plant is watered daily. Where seeds are sown, the earth directly above is broken into the finest powder. Every shrub, every flower, is tied to a stake, and where there is wall fruit, a trellice is erected against the wall, to which the boughs are fastened.

Zurich is an exceedingly industrious place. The field labourer frequently works from four in the morning till eight in the evening; and the townspeople also seem to care very little about amusements; for there is neither theatre, public concerts, nor balls: indeed dancing, from what certainly appears an ultra solicitude for the preservation of morals, is not permitted in any part of the Canton, unless by special permission of the government; and this is almost always refused. In order that the pleasure of a dance may be enjoyed without incurring certain penalties, a given number of persons must subscribe a paper declaratory of their intentions. This is handed to the council; and it is for them to decide whether or no it shall be granted; but it is said that a refusal is generally the result. But although there is little of what we call public amusement, there is a good deal of visiting among the inhabitants; consisting either of dinner parties, to which relations only are invited, and which take place at stated times in each other's houses; or else of *soirées*, which have, however, a different character from similar meetings in France and England, for while there is tea and talk for the ladies, there is tobacco and talk for the gentlemen, as the two sexes do not mingle together on such occasions.

One favourite pursuit of the Zurichers is, after having earned a fortune by industry, to build a country-house on the borders of the lake. Most of the villas which adorn the lake, and which exceed in number and beauty those surrounding any other of the Swiss lakes, are erected as pleasure-houses by the townspeople. The suburbs also, on every side of the town, are studded with handsome residences. There are many pleasant promenades in the neighbourhood of the town; one in particular called the walk of Gesner.

The language spoken at Zurich is a very imperfect patois, but good German is everywhere understood; and the French and English languages also form part of a good education. It is melancholy, however to readers accustomed to the simple rites of the English Church, to think that such a beautiful spot should be the abode of superstition. There is, in the Canton of Schweitz, to the south of that of Zurich, a place called *Einsiedeln*, to which pilgrimages are made every year by the Roman Catholic inhabitants of Switzerland. Mr. Inglis, in his journey through Switzerland, thus speaks of the first sight that met his eye on entering Zurich:—

The quay of Zurich was crowded with a host of miserable looking beings, whose dress and aspect at once distinguished them from the inhabitants of the canton. They were mostly women; their hats were of bright yellow straw; their garments, a union of rags; a scrip, with seemingly scanty provision, hung over the shoulder of each; and in the hand of each was a rosary. Several boats were preparing to receive them; and they were soon, to the number of at least a hundred, disposed in the different boats, and were immediately rowed down the lake. These were pilgrims,—poor misguided, deceived pilgrims,—who were on their way to the church of our Lady, at Einsiedeln, in the canton of Schweitz, to pay their adoration to a miraculous image of the Virgin, and to receive absolution. They had, many of them, come from distant parts of France, Germany, and even Belgium. They had left home and friends, and what to them were doubtless comforts, to journey upon foot some hundreds of miles, and to spend upon this pilgrimage the saving of years. Those have a heavy account to answer, who have aided the delusion of these miserable devotees.

Again, the same writer observes:—

Scarcely a day passed while I resided at the lake-side, upon which one or more boats were not seen filled with pilgrims on their way to Einsiedeln. A monstrous muttering of prayer came over the water, according ill with the smiling scenery around, and the glorious sunshine that lighted them on their way, and in strange and disagreeable contrast with the Swiss echo-song which had just arisen from a boat freighted with light hearts, and with the notes of a sweet pipe floating from the opposite shore. Boats laden with pilgrims passed from, as well as to, Einsiedeln; but the laugh and the jest, instead of the prayer, were heard among them; for they had bowed at the shrine of our lady, and had no more occasion for prayer!

It may not be out of place briefly to state the nature of this pilgrim-place.

A church situated at the small village of Einsiedeln is said, by a bull published by Pope Leo VIII., to have been consecrated by God himself. The Bishop of Constance, in the year 948, was about to consecrate a chapel to the Virgin Mary, when he suddenly heard angels in the air chanting the very same prayer which

is chanted when bishops are accustomed to consecrate churches. The bishop thereupon refused to consecrate the chapel, at which the people were enraged, and while they were expostulating with him they heard a clear voice saying, "Cease, my brethren, it is divinely consecrated!" at which all the people marvelled, and were convinced. Such is the legend promulgated by those in authority; after which, "who can be surprised," as Mr. Inglis remarks, "that the credulous and ignorant should need little incitement to make a pilgrimage to Einsiedeln?" One thing is certain, that the convent and church at Einsiedeln are most magnificent, contrasting strangely with the mean hamlet in which they are situated. The convent is of the Benedictine order, with about fifty resident friars. The sleeping rooms of the brethren are comfortable, and simply fitted up with two chairs and a mattrass on a bedstead; but the eating room is large and magnificent.

The church of the convent is gorgeously decorated with gilding, paintings, marble, &c.; there being not a foot of either walls or roof without some kind of adornment. But the great attraction of the church, that to which the devotees direct their wandering steps, is the Holy chapel, containing the miraculous image of the Virgin. The chapel is of black and gray marble, and stands within the church; and in a niche in this chapel, erected for the purpose, is deposited the image; and at all hours of the day, from the earliest dawn till deep twilight, hundreds may at all times be seen prostrated before the iron gate, through which the devotee may catch a glimpse of the object of his pilgrimage. While Mr. Inglis was in the town, he saw a procession of the pilgrims. Preceded by banners, and the other emblems of the Romish church, and by all the inmates of the abbey, among whom appeared two friars of the order of Capuchins, with hair-shirts and sandals, were seen all the pilgrims then congregated at Einsiedeln. The men walked first two and two, and the women followed, the number of the whole being upwards of 8000. After the procession had made a considerable circuit, it entered the church, where a discourse was preached by one of the Capuchins.

The number of pilgrims who visited Einsiedeln are stated to have been, in 1817, 114,000; in 1821, 124,000; in 1822, 132,000; in 1824, 150,000; in 1825, 162,000; in 1828, 176,000. The revenues of the abbey are said to be very large; for, independently of the sums paid for masses, besides contributions of other kinds, they receive a large accession from the benedictions bestowed upon rosaries, crosses, and images. Thousands and tens of thousands of these are bought by the pilgrims, and are carried to the abbé, who, for the kiss bestowed upon each, receives one, two or more francs, according to the means of the possessor. Many of the pilgrims are the representatives of others, who, for various reasons, may not be able to attend in person at the shrine, and who therefore placed their offerings in the hands of their neighbours. Mr. Inglis, in another part of Switzerland, met with a woman whose reputation for sanctity was so great, that she had obtained the appointment of representative at the shrine of the Virgin at Einsiedeln, for all the wealthy people in the commune in which she lived; she made four pilgrimages every year on their account.

In the square in front of the abbey booths are erected on every side, with shops full of a gaudy display of trinkets, rosaries, books, crucifixes, prints of saints, popes, martyrs, images of the Virgin, and other emblems of the Romish church. These were all purchased in large numbers by the pilgrims.

We cannot conclude this paper without expressing regret that so beautiful and luxuriant a land should be the scene of such mis-applied zeal, and mis-spent time and money.

WILL-O'-THE-WISP.

I HAD the pleasure of seeing that remarkable and interesting phenomenon called *ignis fatuus* or *Will-o'-the-Wisp*, on the night of the 31st of December 1839, in two meadows and a stubble field, about a mile from Powick Village, near the Upton road. I had for several nights before been on the look out there for it, but was told by the inhabitants of the house that previously to that night it was too cold. I noticed it from one of the upper windows intermittingly for about half-an-hour, between ten and eleven o'clock, at the distance of from one to two hundred yards off me. Sometimes it was only like a flash in the pan on the ground; at other times it rose up several feet and fell to the earth, and became extinguished; and many times it proceeded horizontally from fifty to one hundred yards with an undulating motion, like the flight of the laughing woodpecker, and about as rapid; and once or twice it proceeded with considerable rapidity in a straight line upon or close to the ground.

The light of these *ignes fatui* was very clear and strong, much bluer than that of a candle, and very like that of an electric spark, and three or four of them looked larger and as bright as the star Sirius; of course they look dim when seen in ground fogs, but there was not any fog on the night in question; there was however a muddy closeness in the atmosphere, and at the same time a considerable breeze from the south-west. Those *Will-o'-the-wisps* which shot horizontally invariably proceeded before the wind towards the north-east.

On the day before, namely, the 30th of Dec., there was a white frost in the morning; but as the sun rose behind a mantle of very red and beautifully stratified clouds, it rained heavily (as we anticipated) in the evening; and from this circumstance I judged that I should see the phenomenon in question on the next night, agreeably to all the evidence I had before collected upon that subject.

On the night of the 1st Jan. 1840, I saw only a few flashes on the ground at the same place; but on the next night (the wind still blowing from the south-west) I not only saw several *ignes fatui* rise up occasionally in the same locality many feet high, and fall again to the ground, but at about eight o'clock two very beautiful ones rose together a little more than one hundred yards from me, and about fifty yards apart from each other. The one ascended several yards high, and then fell to the ground in the shape of an arch and vanished. The other proceeded in an horizontal direction for about fifty yards towards the north-east, in the same undulating and rapid manner as I have before described. I, and others immediately ran to the spot, but did not see any light during our stay there. Both these nights were starlight, with detached clouds, and, rather warm, but no fog. On the night of the 3rd Jan. the atmosphere was occasionally thick, but there was not any wind or fog, nor the slightest appearance of the phenomenon. I did not observe any lightning during the whole of these observations, which were made by others of the house as well as myself.

I am of opinion that these are electric meteors which rise in exhalations from out of the earth, particularly in the winter season, and that they occur principally if not entirely a day or two after considerable rain, and a change from a comparative cold to a comparative warm temperature.

[*Letter from* Mr. J. ALLIES, *in the Worcestershire Chronicle.*]

IT is very remarkable that two favourite and ingenious apologues prevailed among the heathen philosophers of antiquity, both of them having reference to the introduction of evil by the acquisition of knowledge, and which would seem to have been suggested to their inventors by the scriptural narrative at the fall of our first parents. The beautiful fable of the guilty curiosity and subsequent wanderings of Psyche, until her final reconciliation with her divine husband; and that of Prometheus, particularly as it is given in the terribly splendid drama of Æschylus; each of them clearly point to this important fact. If not actually derived from Scripture, they, at all events, show by their remarkable coincidence with one another, and with the Mosaic history, that the hypothesis to which they refer is a correct inference from the philosophy of morals.—SHUTTLEWORTH

THE HYDROSTATIC PRESS.

THERE are but few principles in Mechanical Philosophy which have led to more valuable applications in the manufacturing arts than that fundamental law of Hydrostatics known as *the equal pressure of liquids in every direction*. This at first sight may appear erroneous, as we know that if water be contained in an open cup or basin, it presses downwards on the bottom of the vessel, but does *not appear* to press upwards, and therefore that the pressure is *not* equal in every direction. But this difficulty will disappear, when we consider the question in a more general point of view.

A liquid holds a medium position between a solid and an air or gas. A solid is composed of particles clinging or cohering so closely together, that force of some kind is necessary to separate them. An air or gas, on the other hand, is composed of particles which have so little coherence, that in order to retain or keep them together, we must confine or press them: thus, if an ounce of air at the surface of the earth fill a certain bulk, it will fill a larger bulk when at an elevation above the earth, because it is less confined or pressed by superincumbent air when it is thus elevated. The atoms of air, in fact, repel one another. Water, and liquids generally, are formed of particles which have no repulsion, and scarcely any attraction, for one another, but they are free to move in every direction, by the slightest force. This is manifested in the simple act of putting the finger into a vessel of water: no difficulty exists in so doing; the particles of water, pressed by the finger, instantly yield, and diffuse themselves between and among the surrounding particles, leaving room for the finger. But here is developed a most important truth, which is indeed the foundation of the whole science,—that although the particles are perfectly free to move among themselves, they are for all common results *incompressible*, that is, a given quantity of water can scarcely be compressed into a smaller bulk. This power of resisting compression is so great that it required delicate experiments to determine whether water was not absolutely incompressible. Some experiments made by Mr. Perkins seemed to show, that when a small quantity of water was compressed by a power of thirteen hundred pounds, it was reduced $\frac{1}{27}$th in bulk, that is, that that which before filled twenty-seven measures, now filled only twenty-six. But supposing the experiment to be correct, the compression is so very trifling, compared with the force employed, that it is scarcely incorrect, in common language, to call liquids incompressible.

Let us now see what results will follow from these two properties: first, that the particles of a fluid move freely among one another; second, that they are, taken collectively, almost incompressible. So long as a fluid is contained in an open vessel, no pressure is perceptible but that resulting from gravity, which tends to confine the fluid to the bottom of the vessel. No upward pressure whatever is perceptible. But let the vessel be completely filled and firmly closed, and a new power is then just beginning to show itself. Suppose we have a cubical vessel, measuring one foot in every direction, closed on all sides, but having a square tube, an inch in diameter, inserted in the top. The vessel may be filled with water, by pouring it down this tube, and so long as the quantity of water is just within one cubic foot, the vessel will not be completely filled: there will be a little empty space just beneath the cover. But when once the cubic foot of water has been poured in, and the vessel is quite full, we have the first beginning of a pressure which will show itself upwards and sideways, as well as downwards. On pouring a little more water down the tube, the pressure instantly commences. The vessel will hold $12\times12\times12=1721$ cubic inches of water, and no more, and if only one single inch above that quantity be poured down the tube it will remain in the tube. If we continue pouring water in the tube to the height of twelve inches, the refusal of the vessel to contain more than a given quantity still exists. We have not changed the quantity of water in the vessel, but have merely added to the height of that in the tube.

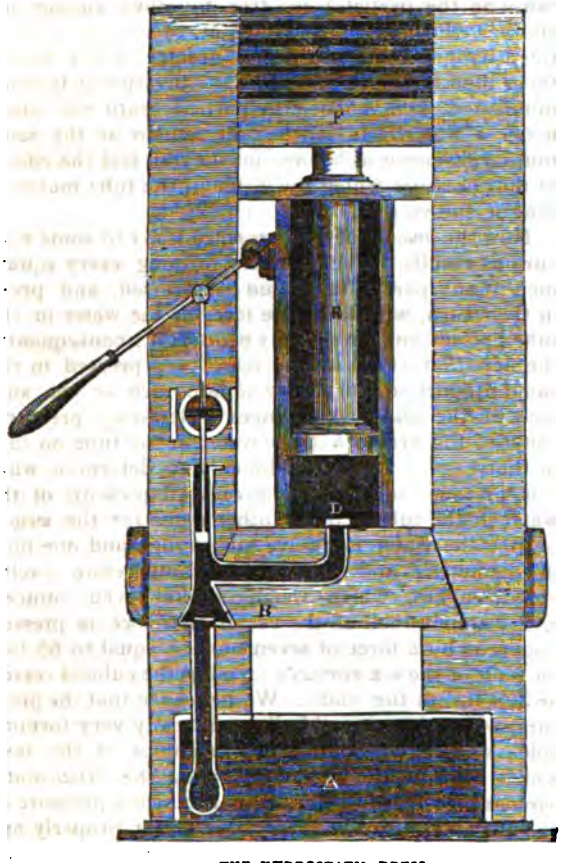
But let us mark what other power is meanwhile brought into action. Is the water in the vessel in the same condition as before the additional water was poured into the tube? Far from it: the *quantity* is the same, but every atom is as it were in a state of constraint. That particular part of the vessel where the tube is fixed, has twelve inches more height of water than any other part. What is the consequence? That the downward gravitating force is twice as much there as in any other part, and the lower particles of water have to bear the weight of those that are above them. But as the particles cannot be forced closer together, this additional pressure then directs itself *laterally*, because as the particles are free to move among one another, they cannot and do not remain at rest, if there happen to be a pressure greater on one side of them than on another. Thus the pressure gets communicated from particle to particle, until the whole body of water feels it: they all remain at the same mutual distances as before, but they all feel the effects of that pressure which the water in the tube makes in that of the vessel.

Now the *amount* of this pressure leads to some very curious results. The particles forming every square inch in any part of the liquid are pressed, and press in their turn, with the same force as the water in the tube presses on that directly beneath it; consequently the top and sides of the vessel are pressed in the same proportion; or, every square inch of the surface of the vessel experiences a bursting pressure, equal to the pressure of the water in the tube on that in the vessel. It is not difficult to determine what this pressure is; for the downward pressure of the water in the tube is but another name for the *weight* of it: the water is twelve inches high and one inch in diameter; and the amount is therefore twelve cubic inches, which weigh about seven ounces. Every square inch of the vessel, therefore, is pressed outwards by a force of seven ounces, equal to 63 lbs. on each of the six surfaces forming the cubical vessel, or 378 lbs. in the whole. We hence see that the pressure, when viewed in this light, is really very formidable; and it is one of those examples of the law, which have led to its being called the *Hydrostatic paradox*: seven inches of water produce a pressure of 378 lbs! But the term paradox is not properly applied here, since by tracing the operation of the law of equal pressure, we see how directly the effect just stated will follow from it:—equal pressure to equal surfaces does not seem paradoxical, and yet it is but another way of expressing the result to which we have arrived.

To trace all the effects of this important law on the equilibrium and pressure of liquids, would be to write a treatise on hydrostatics, since there is scarcely a fact in the whole science but what depends fundamentally on the principle of equal pressure. We shall, on the present occasion, only speak of the method by which this principle is made available for the same purposes as a common screw-press, but to a much greater extent, and in a far more convenient way

In the supposed case which we have detailed above, each side of the vessel was pressed with a force of

63 lbs.; the top was therefore pressed *upwards* with that force. Now if there could be any contrivance by which the top of the vessel would be moveable upwards, without letting out the water, and if there were sixty pounds weight placed on the top, it would still be forced up because the pressure from within is greater than that from without. Seven ounces of water in the tube would therefore actually elevate 60 lbs. weight. But in order to produce a pressure powerful enough to be available for many processes in the arts, either the size of the vessel must be much increased, the diameter of the tube much diminished, or the water made to stand higher in the tube. All these methods have some defects, and it is therefore important to avail ourselves of the fact, that pressure of *any* kind, acting on a small surface of the water in the vessel, will be felt equally at all other parts; so that seven ounces pressure, effected by a piston or any other means, would be as available as the water in the tube. As the kind of pressure induced by a forcing pump is very great, we have thus an almost unlimited supply of power



THE HYDROSTATIC PRESS.

The reader will now be in a condition to understand the action of a hydrostatic press, of which a cut is here given, representing a vertical section of the instrument. At A is a small cistern, or reservoir of water, into which dips the lower end of the pipe of a small forcing pump. This pipe may either have an open end, or, as in the figure, may have several small perforations, through which the water may flow from the cistern into the interior of the pipe. At the part of the pipe near B is a valve opening upwards, and above that is a continuation of the pipe, with a solid piston working vertically in it. This piston is connected by its rod with a handle, which is worked in the usual manner of a pump. A lateral tube springs from the part between the valve and the piston, and after bending upwards, terminates at the valve D. Above this is a hollow cylinder, with a solid piston working water-tight in it. This piston acts by the intervention of a shaft or pillar E, on a stout beam F, so that when the piston rises the beam or platform F rises also.

These being the positions of the several parts, the action is as follows. The water is at the same height in the pipe as in the cistern. But on raising the small piston, the air contained between the two valves and the piston becomes rarified: the valve at B opens in order that the air may equalize itself throughout the tube, and a little water rises in the tube. After a few strokes of the piston, the water has risen above the valve B, and fills the lateral pipe leading to D. The remarkable hydrostatic pressure now begins to show itself. On pressing down the piston again, the water cannot descend into the cistern, because the valve B opens only upwards: it therefore opens the valve D, and gets into the larger cylinder or pipe. A few more strokes of the piston brings the water in contact with the large piston in the cylinder: after this, every effort to press *down* the small piston operates in pressing *up* the larger one, and the amount of this upward pressure depends on the comparative dimensions of the two pistons. If the smaller one is one inch in diameter, and the larger six inches, it presents thirty-six times as much square surface, every inch of which is pressed upwards with the same force as the small piston is pressed downwards. Now, if the piston be pressed down with the force of 20 lbs., (an inconsiderable force with such a leverage as a pump handle affords,) the large piston will be pressed upwards with a force of $20 \times 36 = 720$ lbs.; so that if F were the lower board of a press, it would act on the body between it and the upper board with a force of 720 lbs.

When once the principle of a machine is well understood, improvements in the details may be expected. Mr. Bramah has availed himself of the beautiful hydrostatic law which we have been considering, to construct a press, the power of which is so extraordinary, that a mere statement of it, without explaining the principles on which it rests, would scarcely be credited. The small pipe of the forcing pump is frequently about half an inch in diameter, and of the cylinder twelve inches, so that a section of the large piston contains 576 times as large a surface as a section of the smaller cylinder. The pump is so strongly made, that a force of one ton may be applied to the handle, so that the small piston is pressed down with that force, and the larger piston is pressed up with a force of *five hundred and seventy-six tons*. We merely give this statement in figures, to show more clearly the power of the instrument. The actual power produced may be in any ratio we please,—limited only by the strength of the materials of which the press is made. We have seen a bar of iron cut through by a Bramah press not much exceeding a foot dimensions in each direction. In a future paper on *Bandana Handkerchiefs*, we shall have an opportunity of seeing one of the many instances of the valuable employment of the power produced by hydrostatic pressure.

THE sober stillness of the night
That fills the silent air,
And all that breathes along the shore,
Invite to solemn prayer.

Vouchsafe to me that spirit, Lord!
Which points the sacred way;
And let thy creatures here below
Instruct me how to pray.—CRABBE.

ON SKATING.

No season is so inclement but what it affords amusement to some: the same frost which checks the exercises of the swimmer and the rower, enables the skater and the slider to enjoy an hour's healthful exercise. This subject is not so trifling but that it may deserve a slight degree of notice from us.

The opportunities for indulging in amusements on the ice are obviously dependant on the climate of the country which we inhabit: hence the northern nations of Europe are more familiar with sliding and skating than the southern. The extremely cold and rugged districts of Norway, Lapland, and Sweden, are so frequently covered with enormous masses of snow, that ice-skating, such as we recognise it, is but little practised; in such cases, the snow-skates (described in *Sat. Mag.*, vol. viii., p. 9,) are employed. But in Holland, there is a sufficient amount of smooth ice, and a sufficient absence of snow, to enable the inhabitants to enjoy a considerable amount of skating every winter. Women join in it as well as men, and frequently skate to market, with their baskets on their heads. It is said, that, in 1808, two young women at Groningen won the prize in a skating match, going thirty miles in two hours.

It is not known at what period skating was first practised in England; but there are indications of its existence in the thirteenth century, for Fitzstephen, in his *History of London*, says that it was at that time customary, when the ice was sufficiently strong, for the young citizens of London to fasten the leg-bones of animals under the soles of their feet by tying them round their ancles, and then taking a pole shod with iron into their hands they pushed themselves forward by striking it against the ice, and moved with a celerity equal, as Fitzstephen says, "to a bird flying through the air, or an arrow from a cross-bow:" this statement we must of course sober down a little. He then proceeds to say:—"At times, two of them, thus furnished, agree to start opposite one to another at a great distance.—They meet, elevate their poles, attack, and strike each other, when one or both of them fall, and not without some bodily hurt; and even after their fall are carried a great distance from each other by the rapidity of the motion, and whatever part of the head comes upon the ice it is sure to be laid bare." This must evidently have been rather a violent kind of sport, and bore but a small relation to modern skating. Fitzstephen describes another kind of diversion on the ice, in these words:—"Others make a seat of ice as large as a millstone, and having placed one of their companions upon it, they draw him along, when it sometimes happens, that, moving on slippery places, they all fall down headlong." Strutt mentions that, in his time, it was customary to use sledges, which being extended from a centre by means of a strong rope, those who are seated in them are moved round with great velocity, and form a large circle.

The use of the modern skate is supposed to have been brought from Holland; and for many years skating has been exercised with much elegance in England and Scotland. Formerly the "skating club" of Edinburgh was considered to display the most elegant specimens of skating in the country; but since the establishment of a similar club in London, it is probable that the southern metropolis equals the northern in this matter.

In order to convey to our readers some idea of the *method* by which the art of skating may be acquired, we will give the substance of a description which a member of the Edinburgh club furnished to an early edition of the *Encyclopædia Britannica*.

Those who wish to be proficients in skating should begin at an early period of life, and should first endeavour to throw off the fear which always attends the commencement of an apparently hazardous amusement. They will soon acquire a facility of moving on the inside edge of their skates: when they have done this, they must endeavour to acquire the movement on the outside; which is nothing more than throwing themselves upon the outer edge of the skate, and making the balance of their body tend towards that side, which will necessarily enable them to form a semi-circle. In this, much assistance may be derived from placing a bag of lead-shot in the pocket next to the foot employed in making the outside stroke, which will produce an artificial poise of the body, afterwards very useful. At the commencement of the outside stroke, the knee of the employed leg should be a little bent, and gradually brought to a rectilineal position when the stroke is completed. When the practitioner becomes expert in forming the semicircle with both feet, he is then to join them together, and proceed progressively and alternately with both feet, which will carry him forward with a graceful movement. Care should be taken to use very little muscular exertion, for the impelling motion should proceed from the mechanical impulse of the body thrown into such a position as to regulate the stroke. At taking the outside stroke, the body ought to be thrown forward easily, the unemployed leg kept in a direct line with the body, and the face and eyes directly looking forward; the unemployed foot ought to be stretched towards the ice, with the toes in a direct line with the leg. In the time of making the curve, the body must be gradually, and almost imperceptibly raised, and the unemployed leg brought in the same manner forward; so that, at finishing the curve, the body will bend a small degree backward, and the unemployed foot will be about two inches before the other, ready to embrace the ice and form a correspondent curve. The muscular movement of the whole body must correspond with the movement of the skate, and should be regulated so as to be almost imperceptible to the spectators.

Mr. Walker, in his *Manly Exercises*, gives some very useful instruction concerning the choice and use of skates. The wood of the skate should be slightly hollowed, so as to adapt it to the ball of the foot; and as the heel of the boot must be thick enough to admit the peg or screw, it is desirable to lower that part of the wood of the skate corresponding to the heel, so as to permit the foot to retain that degree of horizontal position which it would otherwise lose by the height of the heel; for, the more of the foot that is in contact with the skate, the more firmly will the latter be attached. As the tread of the skate should correspond as nearly as possible with that of the foot, the wood of the skate should be of the same length as the boot or shoe. The irons should be of good steel, well secured in the wood, and they should pass beyond the screw or peg at the heel, nearly as far as the wood itself; but the bows of the iron should not project much beyond the wood in front; for if they did so, the whole foot, and more especially the hinder part, must be raised considerably from the ice when the front or bow of the skate is brought to bear upon it, and, as the skater depends upon this part for the power of his stroke, it is evident that that must be greatly diminished by the general distance of the foot from the ice. If the skate be too long, the ankle becomes fatigued; if too short, the support will be unsteady. The iron of the skate (which is usually about three quarters of an inch deep, and one quarter thick) is sometimes grooved at the bottom, and at

other times plain. The intention of the former kind, is to assist those whose light weight is insufficient to enable a plain skate to take a firm hold of the ice; but for persons of moderate weight, it is better to use skates with a plain edge, for a fluted or grooved edge cuts too easily into the ice, and is also liable to get clogged up with loose ice and snow. The bottom of the iron should be a little curved or convex from toe to heel; for if perfectly straight it would be capable of describing only a straight line; whereas the skater's progress is in almost every instance in a circular or at least a curved direction, because, in order to bring the edge to bear, the body must be inclined, and this inclination can only be preserved in circular motion: the curve of the iron should be part of a circle of two feet radius; as this form enables the skater to change the direction of the foot with facility.

It must be borne in mind, that the principal art in kating is to make proper use of the *outside edge* of the iron, for it is with this that the skater is enabled to execute the many figures which are sometimes seen. The first attempt of a learner is to stand firmly on his skates; then to walk with them; then to shuffle on in a sort of sliding gait; and then to form a circle inwards, that is, to turn the right foot towards the left and the left towards the right. But the "outside edge" has yet to be attained; and as this is peculiar, we will describe it somewhat more minutely than we have yet done, from a little work on skating published a few years ago. "The best method of getting to the 'outside edge,' is to form the circle inwards,—say with the right foot, and with considerable force; in the course of this, place the foot down in front of the right, and lean principally on the *outside* of the left heel. A little practice and confidence in his balance will enable the student to lift his *right* foot, and hang it behind, while he proceeds to cut outside with the left foot. Let him then stop, and begin the inward circle with the *left* foot, and slip down the outer edge of the right heel in the same way. He has now learned to balance himself, and can venture to strike at once out to the right, on the heel of the right foot, keeping the left suspended behind, with its toe closely pointed to the heel of the right. As he advances, the left must be brought past the inside of the right, with a slight jerk; this slight jerk produces an opposing balancing motion of the body: the right foot then quickly presses, first on the outside of its heel, and then on the inside of its toe, and by placing the left foot down before it, and striking outside to the left, giving at the same time a slight push with the inside of the right toe, he passes from right to left. Having learned this much, the skater will proceed to change from left to right and then from right to left again, without any trouble. To skate 'outside edge' properly, the toe of the suspended foot must be pointed close to the ice, behind the other, and kept there until this foot be required, when it must be brought sharply round to the change. The skater must keep himself erect, leaning most on the heel." This mode of skating being acquired, there is an endless variety of figures and modes of movement that may be produced; some of which are known by the names of the *Dutch travelling roll*, the *spread eagle*, the *Mercury figure*, the *backward outside edge*, the *circle*, the *figure of* 8, the *figure of* 3, *waltzing*, the *minuet*, the *pirouette*, the *quadrille*, *worming and screwing*, &c.—some of these names, it must be confessed, are rather fancifully applied.

Before concluding this paper we may remark, that as the exercise of skating can be enjoyed in this country only for a short period in the winter,—and sometimes not for many years together near our large towns,—an attempt has been made to supply a substitute, by which persons might rapidly glide over any level surface, though not with so much facility as upon ice. This contrivance, which we believe emanated from Mr Tyers, consists of the wood work of a common skate, or something nearly like it, but, instead of a steel support at the bottom, having a single row of little *wheels*, placed one behind another, the body of the skater being carried forward by the rolling of the wheels instead of the sliding of the iron. We have seen these skates used with much facility on a boarded floor; and were our roads smoother than they are, we think a source of healthful exercise might be found in their use; but with gravel roads, or an earthy surface, we fear they could not be extensively used.

ON PHOTOGENIC DRAWING. No. II.

The Daguerreotype.

In the *Saturday Magazine*, for April * last, we gave our readers a brief account of the discovery which had excited so much surprise and admiration on all sides, viz. the production of beautiful and correct drawings without the aid of the artist, but by the agency of light alone. We then gave some description of Mr. Fox Talbot's invention, as represented by him before the Royal Society, with an account of his method of preparing *photogenic paper*, and of *fixing* the design. We also alluded to contemporaneous discoveries of a similar nature which had been made by a Parisian artist of celebrity, M. Daguerre. Since that time M. Daguerre's method has been made public, and proves to be a somewhat difficult and delicate operation, but its results are exceedingly beautiful, and the drawings produced are carried to a degree of perfection, which far surpasses anything before accomplished in that way.

A report was made before the Chamber of Deputies by M. Arago to show the benefits which are likely to accrue to the arts through this discovery, and in this report the history of the invention was traced in the following manner. The property possessed by nitrate or chloride of silver, of becoming black by the action of light, was known to chemists at an early period, but does not seem to have been taken advantage of with regard to the production or re-production of drawings till the year 1802, when Mr. Wedgwood proposed a method of copying window-paintings by means of paper washed with chloride of silver. From that period, it became an amusement with many persons to perform experiments on the same principle. Taking some prepared paper, they placed between it and the sun, an engraving of which they wished to get a representation. This engraving was quickly reproduced on the paper beneath, but with all the lights and shadows *reversed*, for the dark parts of the engraving had intercepted the light, while the other portions had transmitted it freely. This amusement produced no beneficial results, for as soon as the engraving was removed, and the light had free passage to all parts of the prepared paper, the whole became in a very few minutes one black blank.

In the year 1814, a country gentleman, living near Chalons, named Niepce, commenced a course of experiments for obtaining the means to *fix* these beautiful but transient images, and made several remarkable discoveries. At length, in the year 1824, he learned by means of an optician at Paris, that Monsieur Daguerre was deeply engaged in photogenic studies, and especially in trying to fix the images of the camera obscura.

A partnership was entered into by these two gentle-

* See *Saturday Magazine*, Vol. XIV., p. 138.

men in the year 1829, for the further prosecution of the subject to their mutual advantage, and they continued their investigations until 1833, when Monsieur Niepce died, leaving a son to carry on the connexion. The act of partnership drawn up between M. Niepce and M. Daguerre, and which held good between his son and the latter gentleman, states, that M. Daguerre had discovered some entirely new methods, and that they had now the advantage of being able to reproduce images from sixty to eighty times more rapidly than before. At length, a complete and admirable process was discovered, chiefly by the labours of M. Daguerre. A visit was paid to the studio of the artist by Sir John Robison, Secretary to the Royal Society of Edinburgh, and a small party of English gentlemen with him, and they had thus an opportunity of observing that the pictures produced by M. Daguerre's process have no resemblance to anything previously exhibited in the way of photogenic drawing. Variety of colour alone is wanting to make them as perfect representations of a landscape, as those which we sometimes see reflected from a highly polished surface. Sir J. Robison describes the perfection and fidelity of the pictures to be such, that on examining them by microscopic power, details are discovered which are not perceptible to the naked eye in the original objects, but which, when searched for there by the aid of optical instruments, are found in perfect accordance: a crack in the plaster, a withered leaf lying on a projecting cornice, or an accumulation of dust in a hollow moulding of a distant building, when they exist in the original, are faithfully copied in these wonderful pictures. The subjects of most of the specimens exhibited by Daguerre to Sir J. Robison were views of streets, boulevards, and buildings, with some interiors and groups made up of plaster-casts, of which the latter gentleman thus speaks:—

It is difficult to express intelligibly a reason for the charm which is felt in beholding these pictures; but I think it must arise in some measure from finding that so much of the effect which we attribute to colour, is preserved in the picture, although it consists only in light and shade; these, however, are given with such accuracy, that in consequence of different materials reflecting light differently, it is easy to recognise those of which the different objects in the group are formed. A work in white marble is at once distinguished from one in plaster-of-Paris by the translucency of the edges of the one, and the opacity of the other. Among the views of buildings the following were remarkable: a set of three pictures of the same group of houses, one taken soon after sunrise, one at noon, and one in the evening; in these the change of aspect produced by the variations in the distribution of the light, was exemplified in a way which art could never attain to.

There is one remarkable circumstance attending these drawings, namely, that the figures of persons moving along the streets are not represented in the picture, nor is the marking of the pavement imperfect as if obscured by the intervention of their forms. This is accounted for by the consideration that passing objects do not remain long enough to make any perceptible impression, and that as they interfere only for a moment with the light reflected from the road they do not prevent an accurate representation from being gained.

The uses to which this admirable invention may be applied, and the purposes it may ultimately serve, are scarcely to be calculated, but it is evident that the architect and engineer may expect great advantages to result from it. The most correct representations may be made of buildings, machinery, &c., and these transferred to copper or to stone may be cheaply disseminated, and may serve for illustrations to books of moderate price. Anatomical and surgical drawings may be faithfully given: the traveller may get views of all the remarkable buildings and objects he meets with in his wanderings, and more than this, according to the philosophic Arago, antiquarians and scientific men may confidently hope for the acceleration of those sciences which do honour to the human mind. It would take "scores of years and legions of artists" to copy the millions and millions of hieroglyphics on the grand monuments of Egypt, but with the Daguerréotype a single individual would be able to accomplish the vast work, while these designs shall incomparably surpass in truth and fidelity the works of the ablest artists. The photographic delineations having been subjected, during their formation, to the rules of geometry, will also assist the estimation of the exact dimensions of buildings in their loftiest and most inaccessible parts. Until now, the rays of the moon, even when concentrated by the most powerful lens, or in the focus of the largest reflector, have been incapable of producing any perceptible physical effect. The plated discs, prepared by M. Daguerre, however, are found to receive impressions from the action of the lunar rays, and there is every reason to hope that photographic charts of the moon will ere long be obtained. By the aid of the Daguerréotype, the philosopher will be enabled henceforth to proceed on the principle of absolute intensities; he will compare lights by their effects, and if he find it desirable, the same tablet will present him with the impression of the dazzling beams of the sun, and with the pencillings of rays 300,000 times fainter than those of the moon—the rays of the stars.

Such are the opinions of Arago, respecting the discovery of M. Daguerre, and such no doubt are the opinions of most scientific persons who have had an opportunity of inspecting the beautiful delineations in question. The beauty of the results, however, has scarcely enabled many persons to overcome the feeling of disappointment attending the publication of M. Daguerre's secret. It had been hoped that, like the discoveries of Mr. Talbot described in a previous number, the elegance and simplicity of the operation would put it within the power of any individual to prepare the materials for these representations without such a complicated and delicate process as that M. Daguerre proves to be.

There is likewise another source of disappointment arising from the circumstance, that although (in consequence of an arrangement with the French government, of which we shall hereafter speak,) M. Daguerre has published his secret to the world, yet the benefit resulting from its publicity is confined to his own nation alone. An individual in this country is not therefore privileged to prepare the Daguerréotype for sale, since a patent has been obtained for the exclusive right of sale in England by Mr. Berry of Chancery Lane, with the full concurrence of M. Daguerre.

We reserve for a future number the particulars of the preparation of the Daguerréotype, which shall be given with minuteness, according to the information we have received on the subject.

NOTHING is so glorious in the eyes of mankind, and ornamental to human nature, setting aside the infinite advantages which arise from it, as a strong, steady, masculine piety; but enthusiasm and superstition are the weaknesses of human reason, that expose us to the scorn and derision of infidels, and sink us even below the beasts that perish.—ADDISON.

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THE ABBEY CHURCH, TEWKESBURY.

THE Abbey Church at Tewkesbury is a structure which supplies a link to connect past and present times in a remarkable degree; for while on the one hand it serves as the parochial church for the town of Tewkesbury, its history on the other hand is connected with a pile of buildings which, considerably more than one thousand years ago, adorned the same town, although the church itself was built some centuries later. We shall here present a brief account of the ancient Abbey of Tewkesbury, and of the still existing church, which once formed part of it.

Tewkesbury is a considerable town in Gloucestershire, lying on the eastern bank of the Avon, at a short distance from the confluence of that river with the Severn. We shall not have space in the present article to describe the modern town generally, but shall speak of it chiefly with reference to its Abbey and Church. The town, as in many other similar instances, owed its origin to the Abbey built there, or at least owed its importance to it. The earliest records that can be depended upon, speak of two brothers, Odo and Dodo, Dukes of Mercia, who built an Abbey at Tewkesbury, in the year 715. From this period, for nearly three hundred years, but little mention is made in our old Chronicles of the Abbey and its patrons; but in 980 we find it subject to Cranborne Abbey, in Dorsetshire. Through some dissensions, the Abbey and Manor of Tewkesbury passed into the hands of the crown, by whom it was granted to Robert Fitz-Hamon. This was the possessor to whom the Abbey was indebted for all that was architecturally beautiful in it. He re-built nearly the whole of the Abbey and its Church, and it is believed that by far the larger part of the Church, as at present existing, was the work of Fitz-Hamon, however much it may have been altered and repaired.

On the death of Fitz-Hamon, the Abbey and Manor were inherited by his daughter, Matilda, who was wooed by King Henry the First for his natural son Robert. A curious account of this wooing is given in Robert of Gloster's Chronicle:—

Sir, shee saide, ich wote your herte upon mee is,
Mote for myne heritage, than for myselfe I wis:
And such heritage as ich have, litt weet to mee greet shame,
To take a lorde, but he hadde any surname.
Damoseill, quoth the Kyng, thou seest well in this case,
Sir Robert Fitz-Hayme, thi fader's name was;
As fayre a name he shall have, as you may see,
Sir Robert le Fitz-Roy, shal his name be;
Damoseill, he say'd, thi lorde shall have a name,
For him and for his heires fayre without blame:
For Robert, Erle of Gloucester, his name shall be, and is;
He shall be Erle of Gloucester, and his heires I wis:—
Inne this forme, quoth shee, ich wote that all myne be hys.

Whether or not this is a faithful record of the wooing, it is certain that Matilda married Robert, that Robert was made Earl of Gloucester, and that the Abbey of Tewkesbury came into his possession. It is said that the Abbot and twelve of the monks were invited to his table every Sunday. His granddaughter subsequently became queen of King John, and the Abbey and Manor reverted to the crown.

For two centuries after this period, the Manor and Abbey (the Manor House being, as is supposed, *Holme Castle*, at the south-west end of Tewkesbury,) passed from one family to another several times, partly through the disturbed state of England during that period, and partly from the marriage of heiresses into other families. There were, however, no particular circumstances that call for mention during that time, except the following: that the town was ransacked by Walleran de Beaumont on one occasion, and immense riches taken, although the Abbey itself was spared.—and that a severe battle was fought within half a mile of the town, on May 4, 1471, between the rival parties of York and Lancaster. This battle was most disastrous to the latter party, which was headed by Queen Margaret and her son, Prince Edward. After a hot conflict, the Lancastrians fled in every direction, some to the town, some to the Abbey, and others to the Church. The ill-fated Prince Edward, was intercepted in his flight by Sir Richard Crofts, who yielded him up to the King (Edward IV.) for a reward of 100*l*. The King flushed with victory, imperiously demanded of the Prince, how he durst so presumptuously display his banner in *his* kingdom? To which the Prince warmly replied, "To recover my father's kingdom and heritage; from his father and grandfather to him, and from him, after him, to me, lineally descended!" The King, provoked by this answer, struck his prisoner with his gauntlet; an act which served as a signal to the Dukes of Clarence and Gloucester, and Lords Dorset and Hastings, who were present, to put the unfortunate Prince to death. All the principal officers of the Lancastrian army were either killed in the battle, or taken prisoners, tried in the market-place, at Tewkesbury, and beheaded. The unfortunate Queen Margaret was captured, and sent prisoner to London.

The next important event we have to relate, was the surrender of the Abbey at the time of the dissolution of monastic establishments. The Abbey of Tewkesbury was the last one in Gloucestershire to submit to Henry VIII., and the Abbot was rewarded for the submission by the Bishopric of Gloucester. On January 9, 1539, the Abbot and Monks signed a "surrender," which was introduced thus:—"To all Christian people to whom these presents shall come, We, the Abbot, &c., and brothers of the said monastery, send greeting. Know ye, that we, upon full consideration, certain knowledge, and mere motion, and for divers causes, just and reasonable, moving our consciences, have freely and voluntarily dissented and granted to our Lord the King, &c., &c." books of the yearly revenue of the Abbey was found to amount to the large sum of 1598*l*. 17*s*. 6*d*. The Abbot and Monks were awarded pensions during their lives. Of the buildings collectively, forming the Abbey, the following were ordered to be preserved:—The gate leading to the Abbot's lodging, with the buttery, pantry, cellar, kitchen, larder, and pastry, belonging to it; the Abbot's house; the hostrey; the great gate leading into the court; the stable, bake-house, brew-house, slaughter-house, malt-house, garners, &c.; in short, most of the buildings pertaining to the Abbot's residence. But all the buildings deemed to be peculiarly connected with the Romish faith, were ordered to be demolished, such as the church, the chapels, the cloister, the chapter-house, the dormitories, and numerous other buildings, which we need not enumerate. But the inhabitants of Tewkesbury, influenced by a feeling of regret at the demolition of such fine remnants of antiquity, succeeded in subscribing among themselves the sum of 453*l*., with which they purchased of the king the fine Church belonging to the Abbey, together with the chancel, steeples, bells, and church-yard. The Church from henceforth became the parochial church for the town of Tewkesbury.

At a subsequent period, James I. sold the Manor of Tewkesbury for a considerable sum to the corporation. Some years after this, a severe engagement took place near Tewkesbury, between the Royalists and the Parliamentarians; but as this, together with any subsequent events of historical importance, had more relation to the town itself than to the Abbey Church, we shall not dwell on them here, but shall proceed to describe the Church.

Mr. Bennett, in his *History of Tewkesbury*, states that this Church is more truly Norman in design and arrangement than any other English church, and has some peculiarities and beauties not to be found in other similar edifices in England. Though mutilated, and abridged of its original fair proportions and extent, it is still spacious, lofty, grand, and imposing. The portions of it existing at the present time, are, a nave, with aisles; a porch, on the north side; a transept, branching from the central tower; a choir, with aisles terminated to the east in a semi-octagonal shape; three chantry chapels, or oratories, on the south side; two others, to the north; and an appendage, called the lesser chapter room, on the same side. The cloister, and the Lady chapel, which formerly adorned the south side and east end of the Church, are removed, and only small fragments of them remain. Beneath the arches of the choir are several splendid and highly interesting monumental chapels, whilst other monuments are attached to the side chapels and walls.

The Church is built in the form of a cross, and is of large dimensions. Its internal length is 317 feet; and before the Lady chapel was destroyed, the whole length was full 100 feet more. The breadth of the transepts is 122 feet, and within the narrow part called the nave, 71 feet. The height of the body of the Church is 57 feet, and of the tower from the ground, 132 feet.

The nave is separated from the aisles by nine massive columns on each side, which support series of semicircular arches, above the crown of which runs a gallery, cut through the wall, and opening into the nave by a range of double round-headed small arches. The ceiling of the nave has been ornamented with groins, springing from corbel heads, over each pillar; and at the intersections of the groins are various sculptured figures, representing human heads, flowers, &c. The side aisles are much lower than the nave: there are eight pointed arch windows to the north

aisle, and five to the south. Thirteen windows of a similar character light the chapels and aisles which surround the chancel; there are three others in the vestry, and some smaller ones at the back of the altar.

The transepts, or side projections, are parts of the original building, erected, as is supposed, by Fitz-Hamon, and consist of piers and semicircular arches; with low narrow galleries over them. In the north transept are four windows, viz., a fine catherine-wheel window, and three pointed ones. The south transept contains five windows. A modern screen supports the organ gallery, and separates the nave from the choir; but, as Mr. Bennett observes, "this addition, however much it may add to the convenience and comfort of those who attend divine service, little harmonizes with the general character of the building, and it also materially obstructs that unbroken view of the interior of the edifice which would otherwise be obtained."

At the east end of the Church are four chapels, or oratories, two on the south and two on the north side.

We may here remark that the different parts of a religious edifice before the Reformation, were more numerous than in a modern English church; and it may be useful to speak of some of them. The *nave* was the central aisle, leading up to the part where divine worship was performed, and which was called the *choir*. The *chancel* was that part of the choir between the communion table and the screen that separated it from the nave: this was always considered the most sacred part of the church, and by the ancient regulations, which were in force until the Reformation, no woman was allowed to stand within the chancel. *Chapels*, attached to a church or cathedral, were places in which particular services were performed for the good of the souls of those over whose remains they were built, or for the intercession of those saints to whom they were dedicated: thus, the *Lady* chapel, which was contained in almost every cathedral, was a chapel dedicated to the Virgin Mary. *Oratories* were chiefly devoted to private prayer and meditation, separated from the congregational meeting in the body of the building.

The choir of Tewkesbury Church is described as being very beautiful. There are seven large windows of stained glass, which form an imposing termination to the Church. In the two opposite windows, next to the tower, are eight curious whole-length figures of knights in armour, represented as standing under rich Gothic canopies, each nearly filling one of the principal compartments of the window; some are in coats of mail, others in plated armour, and all of them have arms on their surcoats.

Mr. Bennett states, that, between the years 1824 and 1830, the Church underwent repairs to such an extent as to cost 3000*l.*, of which 700*l.* were supplied by private subscription, and the remainder by a parochial rate. The exterior of the tower was carefully examined, and as it was much injured, new stones were introduced wherever the old ones had become decayed; the transept walls and roof were strengthened and repaired; one of the pinnacles on the central tower was rebuilt and the others repaired: and every part of the building, inside and out, were more or less renovated, according to the degree of dilapidation, and to the amount of funds placed in the hands of the builder. There is a circumstance mentioned by Mr. Bennett, in connexion with the repairs of the Church, which deserves to be alluded to here:—"The figures of the Virgin Mary and the Prophet Joel, in the first and fourth compartments of the centre window, had transparent glass substituted for the parts representing the heads, until they were restored, in 1828, to the state in which they now appear, by Mr. Collins, of the Strand. The manner in which this distinguished artist has perfected these figures, is a proof of his taste and abilities, and his refusing to accept of any compensation for it, strongly manifests his liberality."

There are very numerous monuments erected in the Church, to the memory of the distinguished personages who figured in the early history of the Abbey to which it belonged, as also of many of those who fell in the disastrous battle of Tewkesbury. But for these we have now no space left, and must, therefore, conclude our notice of what many persons consider to be the finest parish church in England, with the following observation of the Rev. R. Knight:—"An object of such striking grandeur and magnificence as the Church of Tewkesbury, is formed to excite emotion of no ordinary character: whether considered simply by itself, or in all its relation and dependencies, as a pile of honourable antiquity, or as a sumptuous appendage to one of the largest Abbeys; as a standing monument of the piety, liberality, and taste, of a long line of benefactors; or, as the cemetery, where, having 'shuffled off this mortal coil,' their bodies have crumbled into dust; it affords ample scope for the exercise of inquiry."

Ah! when did wisdom covet length of days?
Or seek its bliss in pleasure, wealth, or praise?
No, wisdom views, with an indifferent eye,
All finite joys, all blessings born to die.
The soul on earth is an immortal guest,
Compelled to starve at an unreal feast:
A spark that upward tends by nature's force,
A stream diverted from its parent source;
A drop dissevered from the boundless sea,
A moment parted from eternity:
A pilgrim panting for a rest to come,
An exile anxious for his native home.—More.

Whatever passes as a cloud between
The mental eye of faith, and things unseen,
Causing that brighter world to disappear,
Or seem less lovely, and its hopes less dear;
This is our world, our idol, though it bear
Affection's impress, or devotion's air.

There is mention made by Homer, in the eighth book of his Iliad, of Jupiter's golden chain, by which he can draw up the gods, and the earth, and sea, and the whole universe; but they cannot draw him down. It is most probably and ingeniously conjectured, says Bishop Newton, that by this golden chain may be understood the superior attractive force of the sun, whereby he continues unmoved, and draws all the rest of the planets toward him.

Beware you never taint the ear of youth,
Nor hear them break the sacred bond of truth,
If with foul-licensed speech your offspring play,
No after polish wears its use away.
The first impressions strongest strike the mind,
And "as the twig is bent, the tree's inclined."

Every man rejoices twice, when he hath a partner of his joy. A friend shares my sorrow, and makes it but a moiety; but he swells my joy and makes it double. For so two channels divide the river, and lessen it into rivulets, and make it fordable, and apt to be drunk up at the first revels of the Sirian star; but two torches do not divide, but increase the flame; and though my tears are the sooner dried up when they run upon my friend's cheeks in the furrows of compassion; yet, when my flame has kindled his lamp, we unite the glories and make them radiant, like the golden candlesticks that burn before the throne of God, because they shine by numbers, by unions, and confederations of light and joy.—Jeremy Taylor.

ROYAL VISITS.

VISIT OF MARY DE MEDICIS TO CHARLES THE FIRST.

THE reader will call to mind several numbers of the *Saturday Magazine*, in which we have endeavoured, under the title of "The Progresses of Queen Elizabeth," to show the manner in which Royal entertainments and progresses were managed in her reign. We now propose to descend somewhat later in the order of time, and describe the ceremonies attendant on a visit which Mary de Medicis, Queen of France, made to Charles the First in the year 1638.

This royal lady was connected with some of the most distinguished reigning families in Europe. She was the daughter of the Grand Duke of Tuscany, the queen of Henry the Fourth of France, and the mother of Louis the Thirteenth, the Duke of Orleans, the queens of England and of Spain, and the Grand Duchess of Savoy. She possessed a haughty and untractable spirit, which kept her continually embroiled during her lifetime, and which brought her to a desolate and unhappy end.

She was born in 1575, and was married to Henry the Fourth in 1600; but as this marriage was one urged by State considerations and as the personal feelings of the parties had very little to do with the matter, they soon evinced a dislike for each other. Ten years after the marriage Henry died, leaving a young family under the care of the queen. The eldest son, then only nine years of age, ascended the throne under the title of Louis the Thirteenth, and the queen was appointed Regent during his minority.

During this Regency the queen poured out all the benefits of office on her Italian friends, to the discomfiture of the French nobles. But when the young king arrived at full age, and had chosen Cardinal Richelieu for his minister, the queen-mother gradually lost her influence, and withdrew from court. She remained several years in France, constantly endeavouring to get the upper hand of Richelieu, and constantly failing in the attempt. At length, in 1631, she quitted France for ever, and became a wanderer in such countries as would afford her an asylum. She lived at Brussels for seven years, on a pension granted her by her son-in-law, the King of Spain. Through some political intrigues her pension was then withdrawn, and she removed to Holland; but here Richelieu again interrupted her; and she then asked for an asylum in England from Charles, which, at the entreaty of his queen, Henrietta Maria, was granted. She travelled through the principal towns in Holland, embarked October 23rd, 1638, and after a rough voyage of six days, landed at Harwich on the 29th.

Charles sent the Duke of Lennox and a royal escort to receive Queen Mary at Harwich, where a round of entertainments was provided for her during a whole week, she being lodged meanwhile at the house of the Mayor of Harwich, and all her suite being lodged at the houses of the principal inhabitants, who courteously offered them for the occasion. Charles and his queen sent every day to inquire after their royal visitor.

At length, after resting from the fatigues of her voyage, she quitted Harwich on the 6th of November, in a royal carriage sent to receive her; her suite and the English nobility forming a procession in other carriages. On arriving at Colchester, she was received by all the inhabitants, the principal of whom read an address to her, and requested her acceptance of a silver-gilt cup. She was lodged on that night at the house of Sir John Lucas. The next day was a rare holiday at Colchester, and the diversions were terminated by an illumination.

On the 8th she left Colchester, and travelled on to Chelmsford, where she rested for the night at the house of Mr. Mildmay. On the same day Charles left London to meet his royal visitor. After the usual royal greetings, the cavalcade proceeded, and arrived that night at Geddy Hall, in Essex, where the queen slept, the king reposing for the night at Havering. On the 10th of November they resumed their journey, and arrived in London the same evening.

The Lord Mayor, Sir Richard Fenn, had received orders to prepare a magnificent reception for the queen; and accordingly, through Cheapside and the principal leading streets of the city, seats were erected at the sides of the streets with a balustrade three feet high all covered with blue cloth *. On the seats thus erected all the liverymen and principal citizens were seated. There were six thousand soldiers ranged through the streets, and the inhabitants decorated the fronts of their houses with tapestry.

When the cavalcade arrived at Aldgate (which was one of the city gates then existing) they were met by the Lord Mayor, the Recorder, and the twenty-four aldermen. Soon after this a cavalcade arrived from St. James's, to accompany the queen thither. The following was the order of the procession to the palace:—Gentlemen ushers in their scarlet liveries, walking two and two: twelve trumpeters: a company of fifty of the band of gentlemen pensioners: sergeants at arms: carriage of the queen's chamberlain: two esquires: the royal carriage, covered with crimson velvet, trimmed with cloth of gold, and drawn by six horses, containing the Queen, Charles the First, the Duke of Lennox, and two foreign ladies of honour: a litter sent by Queen Henrietta Maria for the private use of her mother, carried by two mules: carriages of the royal household and of the nobility; &c.

As the cavalcade passed along, guns, which had been planted along the banks of the Thames, gave a thundering welcome to the royal visitor. After listening, and replying, to an address from the Recorder, the Queen of France proceeded onwards to St. James's Palace, where great preparations had been made for her by her daughter. Henrietta Maria was surrounded by all the ladies of her court, who gave a courteous reception to the suite of the foreign Queen, amounting to no less than 200 persons.

Being settled in the palace, Mary received addresses from the Archbishop of Canterbury, the Lord Mayor, and other official persons: and all was joy and congratulation for a time.

But this was not doomed to be of long continuance. When the first novelty was over, political thoughts began to have their influence; and though Waller, the court poet, had written a high-flown address to Mary on her landing, the time was not far distant when she was again to become a wanderer. As a specimen of the manner in which great folks were flattered by poets in those times, we will here give Waller's poem:—

TO THE QUEEN MOTHER OF FRANCE.
ON HER LANDING.

Great Queen of Europe, where thy offspring wears
All the chief crowns; where princes are thy heirs;
As welcome thou to sea-girt Britain's shore,
As erst Latona (who fair Cynthia bore)
To Delos was: here shines a nymph as bright
By thee disclosed, with like increase of light.
Why was her joy in Belgia confined?
Or why did you so much regard the wind?
Scarce could the Ocean (though enraged) have tossed
Thy sovereign bark, but where the obsequious coast

* See the copy of an old picture of this procession in the *Saturday Magazine*, Vol. XIII., p. 48.

Pays Tribute unto thee: Rome's conquering band,
More vanquished nations under her command
Never reduced; glad Berecynthia so
Among her deathless progeny did go:
A wreath of flowers adorned her reverend head,
Mother of all that on Ambrosia fed.
Thy god-like-race must sway the world to come.——
Would these commanders of mankind obey
Their honoured parent, all pretences lay
Down at your royal feet, compose their jars,
And on the growing Turk discharge their wars;
The Christian knights that sacred tomb should wrest,
From Pagan hands, and triumph o'er the East.
Our England's Prince, and Gallia's Dolphin might
Like young Rinaldo and Tancredi fight;
In single combats by their swords again
The proud Argantes and fiere Soldan slain;
Again might we their valiant deeds recite,
And with your Tuscan muse exalt the fight.

But Waller's poetry was not the weapon that would protect her from political troubles. The English court being Protestant, and the Queen Henrietta Maria, Roman Catholic, there had been a good deal of strong feeling spread abroad; and now that Mary arrived, it was not long before she was regarded with distrust. The mob surrounded her palace, and demanded the dismissal of her priests. She appealed to Charles, and Charles referred her to the parliament: and the Earl of Dorset, Lord Lieutenant of Middlesex, was ordered to send her a guard of a hundred men.

She continued in England under very unpleasant circumstances until 1641, when a petition was presented to parliament, to desire the two houses to join in an address to the king, to hasten her departure out of the kingdom. This was done; and parliament voted her ten thousand pounds to quicken her departure. After an unsuccessful application to her son-in-law, the king of Spain, to permit her either to return to the Netherlands (which then belonged to him), or to pass through them to Holland, she retired to Cologne. Charles caused her to be accompanied as far as Holland by the Earl of Arundel, and gave her ten thousand pounds for travelling charges.

At Cologne she died on the following year, 1642, in great wretchedness, neglected by nearly all the courts to whom she was so nearly related. Her great enemy, Richelieu, survived her about five months.

High minds of native pride and force
Most deeply feel thy pangs, *Remorse!*
Fear for their scourge mean villains have;
Thou art the torturer of the brave!
Sir Walter Scott.

There is a *calm* the poor in spirit know,
That softens sorrow, and that sweetens woe;
There is a *peace* that dwells within the breast
When all without is stormy and distrest;
There is a *light* that gilds the darkest hour,
When dangers thicken, and when tempests lour.
That calm to faith, and hope, and love is given,
That peace remains when all beside is riven,
That light shines down to man direct from heaven!
Edmeston.

E'en as the dew-drops and the genial rain
Enrich and fertilize the sterile plain;
Cause it the kindly fruits of earth to yield,
And with a plenteous harvest crown the field;

So does the Gospel pour into each heart
Its truths Divine, its influence impart:
Softens the stony hearts to hearts of flesh,
Meet to produce the fruits of righteousness.

Promote we then the knowledge of the Lord
And promulgate the Gospel truths abroad,
Till from the north to south, from east to west,
Jehovah's praise is sung, His name for ever blest.—H.A.

SOCIALISM.

There is no trait in the character of human nature more deplorable than the easiness with which it can be imposed upon by the fallacious zeal of knaves or madmen; and the more so, when we reflect that this failing arises from the perversion of one of its most beautiful endowments, namely, its yearning after the perfect and the true. Man is betrayed by his own eager thirst to every mirage that rises before him in his wanderings through the weary and uncertain ways of this mysterious life. But in most instances, not only a too ready credulity, but a somewhat perverse disposition in the nature of that credulity, is to be lamented, and it is sad to observe that the wilder and more noxious the meteor that attracts him, the more earnest and the more fatal his pursuit. No doctrine whatsoever, so dangerous, so inconsistent, so absurd, as not to boast its apostles and followers; and tenets and opinions, which characterize madness or monomania in the individual, become in the notions of the uncertain vulgar, a new light, a glorious dispensation. The tendencies of all animated nature around us, are wholesome and beneficent: it is for man alone, with his lofty boast of freewill, even in his pursuit of higher and better things, to follow too often and too blindly the mischievous and the false.

There is, in these days especially, a lofty and somewhat arrogant assumption of superiority. The schoolmaster has been abroad—intelligence is diffused—intellect no longer feels its way with wholesome and necessary caution, it vaults in these ambitious days, and like ambition "o'erleaps itself." The world, forsooth, is altogether wiser than it has been; and yet these are the days in which the opinions of a man can gain ground, whom our ancestors would have secured and whipt, as plainly and confessedly a sore rogue and itinerant corrupter of good sense and morality. Wild ridiculous fanatics, together with their miserable victims, disfigure many a page of our goodly history, but most, if not all, knew better than to attack the time-founded institutions of their country; these have ever been more spiritual enthusiasts than temporal rascals, not less crackbrained but more honest.

These Owenites form a sect whose object is to introduce a specious generalization of larceny, and an universal libertinism into the health of their country; one man endeavouring to substitute his crude nostrum for the results of all the wisdom and experience of the past, the fruit of the common sense and intelligence of every age, confirmed and hallowed by the great teacher, Time himself; in short, to overturn our established faith, the common faith of the whole civilized world, to govern and direct man's social condition in a new method with his theory. But no, it cannot be. Gullible as some of the masses even of the nineteenth century have proved themselves, they cannot but see that these very doctrines which it is professed are to improve our social state, and to increase our social happiness, actually outrage in their very outset the eternal principles of both!

Old English sense is yet too prevalent to permit her multitude to gorge the monstrosities of Owenism. In this confidence we should feel inclined to pass by the arch-deceiver with contempt, were there not a voice within our bosoms compelling to another course, "the voice of charity." We might stand by idle and unhurt, and watch the unholy flame of this new sect blaze for a little while, and pass again into darkness; but who can tamely bide the thought of all the poor fluttering and weak-minded rushing, moth-like, into the glare to perish: the easily deluded many—the

reckless or the ignorant? Ye pastors of Christ's people, watch and be vigilant, the greedy wolf that dare not attack the steadfast and the true, may devour the thoughtless and unwary of your several flocks.

For ourselves, we have no fear of the ultimate prevalence of Socialism. Whatever importance or dangerous influence it may appear to have obtained, seems to arise, like that of some diseases, more from the unhealthy state of the body affected than from its own intrinsic energy. Socialism may, for a while, serve to settle and stagnate the scum and garbage of England's thickly-populated, and at present excited country, till a return of sanity and vigour shall cast off this excrescence of its weakness. But we must not in the mean time forget that by its accursed doctrines, many a heart may be made sorrowful, and many a soul immortal perish, utterly and for ever, if deluded by these pernicious fallacies, from the cheerful hopes and godly promises held out to it in the faith of a Christian. W. M.

WATER.

IT is the poet of nature who should write the history of water. Familiar, even to neglect, this is a wonderful substance, and we forget to admire; beautiful, and we do not note its beauty. Transparent, and colourless, it is the emblem of purity: in its mobility it is imbued with the spirit of life: a self-acting agent, a very will, in the unceasing river, the dancing brook, the furious torrent, and the restless ocean: speaking with its own voice, in the tinkling of the dropping cavern, the murmuring of the rill, the rush of the cascade, and the war of the sea-wave; and, even in the placid lake, throwing its own spirit of vitality over the immoveable objects around. And if its motion is the life of the landscape, it is, at rest, the point of contrast and repose for the turbulent multiplicity of the surrounding objects: a tempering shadow in reflecting the bright picture, and, as the mirror of the sky, a light amid darkness; while it is the colour to enhance what it contrasts, whether in its splendour or its shade.

Its singular oppositions of character are not less striking. Yielding to every impulse, unresisting, even to light, it becomes the irresistible force before which the ocean-promontory crumbles to dust, and the rocky mountain is levelled with the plain below; a mechanical power whose energy is without bounds. Of an apparently absolute neutrality, without taste, without smell, a powerless nothingness, that deceptive innocence is the solvent of everything, reducing the thousand solids of the earth to its own form. Again, existing at one instant, in the next it is gone, as if it were annihilated: to him who knows not its nature, it has ceased to be. It is a lake, and in a short time it is nothing: again it is that lake, and it is a solid rock. It is rock-crystal at one instant, and in the next it is invisible; while the agent of its invisibility transports it beyond the earth: that rock is air. Thus sailing in the heavens, it descends again, unchanged, again to renew the same ceaseless round: for ever roaming between the earth and the vacant regions of space; wandering about the earth below, in the performance of its endless duties, and though appearing at rest, resting nowhere. This, and more, is water: powerful in its weakness, and powerful in its strength: an union of feebleness and force, of incessant activity and apparent tranquillity, of nullity and ubiquity, of insignificance and power, a miracle of creation.—MACCULLOCH.

THE RAINBOW.

HAIL! beauteous meteor of the thousand dyes,
Emblazoned, like a trophy, on the skies.
Heaven's richest hues inlay thy lightsome span,
Kindled to glory; for a Sign to man.
Those vivid tints that through the welkin shine,
Proclaim thy matchless Architect divine.
Gemmed by the rain-drops, was the tissue spun
With golden threads irradiate of the sun,
Like stars enwreathed; whose myriad spangles throw
The prism's gay lustre to the world below.
Weft of mute music thou, whose pictured tones
Blend in accord, and melt in kindred zones.
Sweet solace ours, when lurid tempests frown,
To mark thy gradual braid th' horizon crown!
First, faint brief segments spring on either hand,
Whence lost abrupt, soon longer curves expand;
More massive, high upreared, the glowing form
In bolder contrast now bestrides the storm:
Fain its bright column would our arms embrace,
Yet at each step a fleeting beam we chase;
And whilst we fear lest ere the whole be viewed,
The subtle vision may our sight elude,
Mercy, fleet herald from the realms above,
Buoyed in the ambient air of heavenly love,
With stedfast key-link binds the quivering arch,
Then speeds thereon to Earth her volant march.
See! through the dark depths of th' unfathomed main
The mirrored brilliance softly gleams again;
Warning the surges that their ruthless might
No more shall revel on the mountain height,
Nor through the fertile fields and valleys rave,
Engulfing Nature in the whirling wave:
No! for when 'neath Armenia's summits hoar
The shrunken waters lashed their slimy shore,
And found whene'er they strove beyond to roam,
The rising cliffs rebuke their baffled foam;—
When the glad fathers of man's rescued race,
Exulting on the lone Ark's resting-place,
Had bent the knee, invoked the Almighty name,
Drawn votive blood, and fanned the sacred flame;—
When o'er fair Nature burst that sunny smile,
More lovely for her glistening tears the while;—
Then from the heavens was heard an awful voice
That bade the favoured patriarch rejoice:
Well pleased the Deity had seen arise
Prayer mingling with the smoke of sacrifice!
And now the solemn Covenant He swore,
That He would flood the new-born land no more;
Then rays from Heaven with tears from Earth He blent,
And wrote His promise on the firmament*.
View it†, vain man, whose dull unheeding soul
No cheering hopes, no startling fears control,
Nor the pale splendour of the moon absorbs,
Nor the deep rapture of the hymning orbs;
Whose sordid thought ne'er searched Creation's laws,
For the vast goodness of th' Omniscient Cause,
Ne'er felt ecstatic joy when laughing May
Wreathes with young flowers the verdant brow of day,
Nor owned with transport chastened, awed, refined,
Might on the mountain, wonder in the wind:
Behold! and though thou deignest nought to bless,
Yet inly scan thy very nothingness.
Such thou hast shone, bright Rainbow! when the sky
Has clothed in clouds its blue serenity;
And such shalt shine; while grateful for the vow,
All nations of the Earth to Heaven shall bow,
Curbing the tempest on its thunder-path,
Chaining the boisterous billows in their wrath;
Majestic symbol of thy Maker's might!
Girdle of beauty! coronal of light!
God's own blest hand-mark, mystic, sure, sublime,
Graven in glory to the end of time!
Nor dost thou live for Earth and Time alone:
In Paradise, around th' eternal throne
Thine emerald lightnings play‡; thine every gem
Is treasured for the Conqueror's diadem§,
When, with a shout that will Earth's centre rend,
Christ with His saints and angels shall descend,
Careering kingly over sun and star,
The winds His coursers, and a cloud His car:—

* Gen viii. & ix. † Ecclus. xliii. 11. ‡ Rev. iv. 3. & Ezek. i. 28.
§ Rev. x. 1.

No watery deluge then Earth's funeral pall,
But sulphurous flames enwrap the reeling ball.
Thus thy triumphal banner floats unfurled
Above the wrecks of this self-ruined world;
From cloud, from throne, from crown, betokening mild
Jehovah to lost sinners reconciled!

REV. THOMAS AGAR HOLLAND.

ON PHOTOGENIC DRAWING. No. III.

THE DAGUERREOTYPE.

THE developement of the secret of M. Daguerre's method of photography was occasioned by an arrangement between M. Daguerre and the Chamber of Deputies, by which a pension of 6000 francs, (about two hundred and forty pounds English), was bestowed on him, and one of 4000 francs, (about one hundred and sixty pounds,) on M. Niepce, with a reversion of half the respective amounts to Madame Daguerre and Madame Niepce. The discovery was therefore thrown open to general use in August last, when it was stated at the weekly sitting of the Academy of Sciences at Paris, by M. Arago. The greatest curiosity prevailed, all the seats allotted to the public were quickly occupied, and a crowd of persons disappointed of gaining admission, remained waiting in the court of the Institute, eager to catch the news of the important process.

The designs of M. Daguerre are executed upon plates of copper, covered with silver foil, and it appears that the combination of the two metals tends to the perfection of the effect. The silver must be the purest that can be procured, and the thickness of the copper must be sufficient to maintain the smoothness of the plate, so that the images may not be distorted by the warping of the tablet. The thickness of the two metals united should not, however, exceed that a stout card. The process is divided into Five operations.

The *first* consists in polishing and cleaning the plate, in order to prepare it for receiving the sensitive coating, upon which the light is to act.

The *second* is to apply this coating.

The *third* is the placing the prepared plate in the camera, so as to receive properly the action of the light.

The *fourth* is to bring out the image, which is not at first visible.

The *fifth* and last operation is to remove the sensitive coating on which the picture is first impressed, otherwise this coating would continue to be affected by light, and would quickly destroy the picture.

The materials for the *first* operation, or the preparation of the plate, are pumice stone, finely ground and dried, olive oil, fine cotton, a phial of nitric acid, diluted with sixteen parts of distilled water, and a wire frame for placing the plate upon, while heat is applied to it by the spirit lamp. The size of the plate is regulated by that of the camera obscura.

The operation is begun by polishing carefully the surface of the plate. The pumice stone is powdered all over the silver surface, by shaking the bag which contains it, without touching the plate. With some cotton, dipped in a little olive oil, the operator then rubs the plate gently, beginning with the centre and rounding his strokes to produce equality of surface.

The plate is laid on several folds of paper, during this operation, and these are renewed at intervals, lest the tablet become bent or warped, through any inequality of support. The pumice stone must be renewed and the cotton changed several times. When the plate is well polished, it must next be cleaned by powdering it all over once more with pumice, and rubbing with dry cotton, rounding and crossing the strokes as before. A little cotton is now rolled up, and applied to the mouth of the phial containing the diluted acid. The phial is inverted, and the centre only of the cotton is wetted, and that but slightly. The surface of the plate is now rubbed equally all over with the acid, but only in sufficient quantity just to skim the surface. If, as frequently happens, the acid run into small drops from the high polish, change the cotton, and rub down the globules as quickly as possible, but always gently rubbing, for if allowed to rest, or to run upon the plate, they will leave stains. It will be seen when the acid has been sufficiently diffused, by the formation of a thin veil spread regularly over the whole surface of the plate. It must then receive one more powdering of pumice, and be cleaned with fresh cotton as before. The plate must now be subjected to strong heat, and for this purpose it is placed upon a wire frame, made to support it over a spirit lamp, the silvered surface being uppermost. The spirit-lamp is now held beneath, and moved round and round, the flame touching and playing upon the copper. This must be continued for at least five minutes, when, if the lamp has been properly applied, a white strong coating will appear on the surface of the copper. A charcoal fire is perhaps preferable to the lamp, for the operation can be then more quickly performed, and the heat will be perfectly equal. If this method be adopted the plate must be held over the fire by pincers, until the veil appears. The plate is now to be cooled *suddenly*, by placing it on a cold substance, such as a marble table, a mass of metal or stone. When perfectly cold, the gummy appearance must be removed from the surface, by rubbing again with dry pumice and cotton, changing the cotton frequently. The polishing being thus completed, the operation of the acid is to be repeated three different times, dry pumice being powdered over the plate each time, and polished off very gently with the cotton, which must be very clean; care being taken not to breathe upon the plate or to touch it with the fingers, or even with the cotton upon which the fingers have rested, for the slightest stain upon the surface of the plate will prove a blemish in the drawing. If the plate is not to be used immediately, the last operation is not performed, for it is necessary that the final application by acid be performed on every plate immediately before placing it in the camera.

The *second* operation consists in coating the plate, and requires a small quantity of broken iodine and a small square box. In the upper part of this box the plate is fixed, with the face downwards, the copper surface having been previously fixed upon a board, by means of metallic bands and catches. A quantity of the iodine is placed in a saucer at the bottom of the box, and is covered by a piece of gauze, that the evaporation of the iodine may be regulated, and that the compression of the air on the lid of the box being closed, may not drive out any particles of iodine from the saucer, to the detriment of the silvered surface of the plate.

The apparatus is to remain in this position till the vaporization of the iodine has condensed upon the surface of the plate, sufficiently to cover it with a fine coating of a yellow gold colour. The time required for this effect to be produced varies from five minutes to half an hour. The plate must be taken out the instant a gold tinge is produced, or it will change to violet, and in this state be less sensitive to the impressions of light. These operations must be performed in a darkened apartment, by the feeble light of a taper, or the plate will be acted on too soon during

the moments in which it is necessary to raise it to examine how the work is going on. The evaporation of the iodine should be spontaneous, and it is important that the temperature of the interior of the box should correspond with that of the rest of the apartment. On this account an apparatus in constant use, and impregnated with the vapours of iodine, will produce a much more speedy effect than a new box. The second operation is now over, and the third should immediately succeed it, for after the interval of an hour the action of the iodine and silver is no longer effective.

The *third* operation is the proper adjustment of the plate in the camera to receive the required images. This must be done quickly, avoiding light and contact, the camera having been previously fixed in the proper position. It is a task of some nicety to determine the exact time necessary to effect the desired object, and the operator must make the best guess he can upon the subject, for there is nothing in the appearance of the plate to guide him, the surface presenting no visible change when it is taken out of the camera. If the sun-light be intense, three minutes will be sufficient, in other cases it may require thirty. The seasons, as well as the hour of the day, have considerable influence on the operation. The most favourable time is from seven to three o'clock, and a drawing taken at Paris in the months of June and July may be obtained in three or four minutes. In May or August it will take five or six minutes; in April and September seven or eight, and so on. Yet this is only the case when the objects are strongly illuminated, and it often happens that twenty minutes are required for the process in the most favourable months. All this will be ascertained by repeated trials, and the operator will learn to regulate the time during which the plate is to be exposed to the solar rays, so that the sketch shall neither appear vague and indistinct, nor black and heavy.

The *fourth* operation is the mercurial or disengaging process, by means of which the images are developed. A deep square-sided box, of the breadth of the tablet, is furnished with a cup containing three ounces of mercury. In this mercury the bulb of a thermometer is placed, and the top of the instrument is passed through a hole in one of the sides of the box. The box must have an opening below, so that a spirit lamp can be applied to the under part of the cup containing the mercury. The upper part of the box receives the plate, immediately on its being removed from the camera, the face of the plate being downwards, and *inclined at an angle of* 45°. Thus all is ready for the operation, and the fumes of the mercury are now disengaged by the heat of the spirit lamp, until the thermometer indicates a temperature of 140° Fahr., when it must be immediately withdrawn. If the thermometer has risen rapidly, it will continue to rise after the lamp is removed, but this ought not to exceed 167°. In a few minutes the faint tracery of objects will begin to appear, and this process must be examined by means of a small window in the side of the box, and by the light of a taper, but the taper must be used cautiously, that its rays fall not upon the plate. When the thermometer has fallen to 113°, or even before that, if the sketch appears complete, the plate may be removed, detached from the frame of wood in which it had previously been fixed, and if necessary it may be laid aside without injury, until it is convenient to perform the fifth process. Great care must, however, be taken to avoid its exposure to the light.

The *fifth* operation consists in fixing the impression by removing from the tablet the coating of iodine, on which the light would otherwise continue to act. A saturated solution of common salt, filtered through paper, and warmed, or a weak solution of hyposulphate of soda, which does not require warming, is poured into a square shallow copper trough, to the height of an inch. Distilled water is poured into a similar trough, and the plate is first plunged into the water and immediately removed, then immersed in the saline solution, where it is allowed to remain face upwards, till the yellow tinge has entirely disappeared. It is moved about by means of a little copper-wire hook, and as soon as the desired effect is obtained, it is removed from the solution with both hands (without touching the drawing) and plunged again in the pure water. It is then placed on an inclined plane, and distilled water, hot, but not boiling, is poured over it. The plate must then be dried rapidly by blowing on it, and moving it backwards and forwards in the air.

The drawing is now finished: it remains only to preserve it from dust and from vapours, which might tarnish the silver. It should therefore be placed in a square strong pasteboard with a glass over it, and be framed in wood. Without such preservatives, though the sketch will resist gentle washing, yet, as it will not bear the slightest rubbing, it will speedily receive injury.

Such is the process of M. Daguerre, and so mysterious is it, even now that the method of performing it is publicly made known, that M. Arago declares the sciences of Optics and Chemistry, in their present state, to be inadequate to give any plausible explanation of it. We may therefore well unite in the wish expressed by Mr. Talbot, at the meeting of the British Association in August last, that this discovery may be considered as "a call made on all the cultivators of science to use their united efforts, by the accumulation of new facts and arguments, to penetrate into the real nature of these mysterious phenomena." We must also express our hope that as the subject becomes better understood, the process will be simplified, and placed within the power of those who are now totally debarred from entering on a work, which makes such extensive demands on their time and patience as the system of M. Daguerre.

INSCRIPTION ON A TOMBSTONE.

ART thou a man of honest mould,
With fervent heart and soul sincere,
A husband, father, friend? Behold!
Thy brother slumbers here.

The sun, that wakes the violet's bloom,
Once cheered his eye, now dark in death;
The wind that wanders o'er his tomb,
Was once his vital breath.

But mark! the wind shall pass away,
The sun shall vanish from the sky;
Thy brother's bones, in that great day,
Shall live, and never die.

SAW ye the Sun, obscured at noon,
Burst through the mist, and fiercer blaze?
Saw ye at eve the clouded moon
Shine out, and shed soul-soothing rays?
Oh! thus shall truth's eternal beam
Consume foul falsehood's venomed shroud:
Thus, thus shall lovely virtue gleam
Through calumny's malignant cloud!

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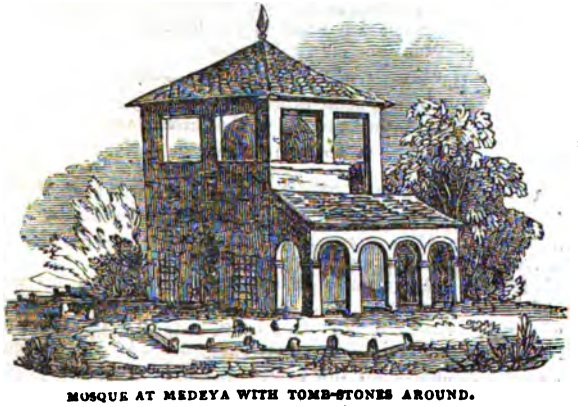
SOME ACCOUNT OF ALGIERS, AND ITS CONQUEST BY THE FRENCH. II.

COFFEE-HOUSE AND SCHOOL OF BYRMADRAIS, NEAR ALGIERS.

We proceed to notice the most important towns of the Regency of Algiers.

Medeya. This place is situated a few miles southward of Algiers. On the road conducting towards it is the Café de Byrmadrais, as above represented. After leaving the city and proceeding for about half an hour towards the south, through a paved road bordered with thick hedges, the traveller enters a pretty valley, the sides of which are covered with picturesque rocks. Through the bottom of this valley flows a little brook, and at the point where the brook and the road meet are constructed a pretty looking coffee house, and a school, one on one side of the brook and one on the other. These were built after the defeat of the Spanish troops under Orelly, "to thank God for having aided the faithful to vanquish their enemies."

Proceeding onwards through a pleasant country, the traveller arrives at Medeya. (See p. 84.) On the left he sees many country houses, surrounded by fields and hedges.



MOSQUE AT MEDEYA WITH TOMB-STONES AROUND.

Before entering into the town he passes under a lofty aqueduct, which brings water into the town from some neighbouring mountain; this aqueduct is composed of two lines of arches: and is constructed very substantially of chalk, clay, stone, and brick. Among the stones employed are many which seem once to have formed part of some Roman construction. The aqueduct terminates in the town at a reservoir protected by powerful masonry, apparently to prevent any attempts to cut off the supply of water to the city.

There are two gates by which to enter Medeya, large but low, and on passing through that one leading from Algiers we enter a tolerably large street, with foot paths on each side, and a canal running through the middle. This street runs the whole length of the city, and has smaller streets branching out from it. Medeya is built on a hill, which is steep towards the west, and gently sloping towards the east. There are a few mosques in Medeya; in the one represented in the annexed cut, the door at the left leads into a small public school.

Medeya was the residence of the Bey of Titerie. He had in the town a barrack for janissaries, some handsome houses occupied by the principal Turkish officers, a large square building containing the magazine, and a palace. The exterior of this palace, represented below, has nothing very elegant about it; but on entering through a door or porch, and passing through a corridor, a more elegant scene presents itself. A large square court is seen, paved with white marble and surrounded by a gallery with arcades of Moorish achitecture, into which the

EXTERIOR OF THE PALACE AT MEDEYA.

doors and windows of the apartments open. This court communicates by a corridor with a smaller court, furnished with a gallery, but not with pillars. This court was surrounded by apartments and offices occupied by domestics, officers, &c. and filled with stores of various kinds.

Medeya contains about six or seven thousand inhabitants, of which about a thousand are Turks, and the remainder a mixture of the other Algerine tribes.

Oran is an important town in the western part of the Regency, about seventy-six leagues from Algiers. It is built upon the sea coast, at the inner part of a bay, on two plateaus or plains separated by a valley through which flows a river. Oran was possessed by the Spaniards for a long time after they had been forced to give up the city of Algiers, but was ceded to the Dey in 1791. The town was, about the last-mentioned period, almost destroyed by an earthquake, but was soon afterwards rebuilt. The bay is but little fitted, from its small depth, for the reception of ships.

The town itself presents many good and remarkable buildings, which are distinguished into two separate classes; for the Spanish portion of the town was situated entirely on the eastern plateau, and the other half, the Moorish, on the western. The Spanish quarter is in rather a ruinous state, showing the remains of what were, before the earthquake, mansions, churches, and convents. The governor's palace, of which some parts yet remain, appears surrounded with many good houses; and many aqueducts and fountains had also been constructed near them.

The other part of the town is built almost wholly in the Moorish style. The houses are much in the style of those in Algiers, but the streets are rather wider and more commodious. When the French army took possession of Oran, almost all the inhabitants, with the exception of the Jews, made their escape, taking with them their families and portable property. But before the arrival of their conquerors, the town contained five or six thousand souls, consisting of the same classes as those of Algiers. But it is worthy of remark, that their behaviour was more civilized and rational than that of the Algerines, for they were engaged in agriculture and commerce, rather than in piracy. The Jews who remained in the city after the French had taken it, defended their new masters against the attacks of some roving Arabs,—a circumstance rather rare in the people of that religion, seeing how seldom they take part in warfare. On one occasion when the Arabs were about to attack the French, the Jews took up arms, and mounted guard during the night on the terraces and ramparts. On another occasion, when a detachment of French were engaged with the Arab cavalry out on the plain, the Jews ventured to sally out from the town, with asses and mules carrying leather buckets full of water for the relief of the parched French soldiers.

There are a great number of Moorish artisans in or near Oran: some are shoemakers, some tailors, some weavers, &c. On the borders of the river, near the sea, are a number of tan-pits, and manufactories of morocco leather. Most of the public shops are kept by Jews; but the coffee-houses are kept by the Moors. Oran has been accustomed to carry on a considerable trade with Spain, and Italy, in grain, cattle, linen, and morocco leather. Most of the *haiks*, bernous, and brown capuchins or hoods, worn by the Moors of Barbary, are made at Oran.

The Mahometans of Oran are very attentive to the duties of their religion. Those who cannot go to the mosques at the appointed hours of prayer, never fail to pray in their shops, or in the streets, when the hour arrives. They are said, however, to be less attentive in their honours to the dead than the inhabitants of Algiers, with whom it is a point of piety and duty frequently to visit the graves of their fathers, and plant flowers between the four stones which form the tomb.

Constantina. This is a town in the eastward part of the country, situated in the midst of an extensive plain: the plain terminates in a high mountain, at the foot of which flows a river which forms a half circle round the town, and washes its walls. Constantina is not fortified; its walls do not even surround the town, as in most other towns of Barbary. At the entrance, on the side towards Algiers, is a small battery, weakly guarded. The aspect of the town is very similar to that of Medeya: all the houses are covered with tiles, but none of them present the white appearance of the Algerine houses. The streets are broad, and tolerably straight; and over the river is a fine stone bridge, said to have been constructed by the Romans. There are no squares or open places in the interior of the town; but the town contains the palace of the Bey, the Kasba occupied by a Turkish garrison, and some mosques. There is not a single fountain in Constantina, so that all the water required by the inhabitants has to be brought from the river in leather buckets, borne on the backs of mules; it is then sold in the streets. The two borders of the river contain many corn mills, pleasure gardens, and country houses, among which is one belonging to the Bey. At the southward of the town there is a camp of Turks stationed to watch the proceedings of the roving Arabs and Berbers: were this not the case, the latter would frequently pour into the town and plunder it.

Constantina is a considerable place, containing a population of twelve or fourteen thousand souls; they consist of Turks, Arabs, Negroes, and Jews, and the latter appear to have much more liberty and influence than in any other part of the country. The inhabitants bear a character for probity and industry. They employ themselves in agriculture and commerce, exporting corn, cattle, linen, and wax to Europe.

Bona is a little sea-port distant about a hundred leagues eastward of Algiers, on the point of a promontory which protects a harbour capable of sheltering vessels. The population was less than two thousand when the French attacked the place. The streets are straight and unpaved: the Kasba, elevated on a hill, is surrounded by a high and strong wall, and from its advantageous position, commands the whole town.

The inhabitants of Bona were almost wholly Moors, who carried on a commerce with the European states in corn, cattle, &c. But when the horrors of war disturbed them, they turned their attention to agriculture. It has been remarked that the inhabitants of all the secondary towns in the country display better qualities than those of the city of Algiers. It is not difficult to account for this when we consider that it was the metropolis which was chiefly engaged in the debasing and ferocious corsair system. The Moors of Bona are more civilized in their behaviour than those of Algiers. They had to play a difficult part when the French entered the country. After the capital had been taken, the Bey of Constantina summoned the inhabitants of all the rest of the country to attack the French. The Moors of Bona, for reasons which they probably thought sufficient, did not choose to obey this call; and when the French attacked Bona, they found the Moors no way indisposed to change masters. This afterwards subjected them to fierce attacks from the Arabs and Berbers; but they appear to have remained tolerably well disposed towards the French.

The roving tribes outside of the town are exceedingly fierce and warlike, and harassed the French much in their progress towards Bona.

These are the principal towns to which we need direct our attention. On the roads from one town to another there are public wells, placed on the road-side for the accommodation of travellers. Where there is so much sandy desert, the value of this arrangement is greater than we in England can fully appreciate.

A ROAD-SIDE WELL.

We have more than once had occasion to speak of *Marabouts:* we must here explain what is understood by that term. At p. 88 is represented the residence of a Marabout of Sydi-Abdekadet, and there are many more such. These Marabouts are men who have a reputation for genius and supernatural power. If a Moor, an Arab, or a Berber, wishes to propitiate the fates, he applies to a Marabout in his hermitage, and gives costly presents. If a Marabout wants any article for his own use, he does not scruple to enter the house of any one and help himself, the people thinking it an honour to be so noticed by him. This is carried so far, that the most sacred of social rights are disregarded, and the hypocrites take advantage of the credulity of the people to violate every tie of decency and propriety. Their power and influence are, in fact, greater than those of any other parties whatever in the country, since they have a hold on the most secret thoughts and superstitions of the

people. It is among the Berbers and Arabs that their power is greatest,—less among the Moors and Turks, and probably not existing at all among the Jews. When a Marabout dies, a splendid tower is generally built by his devotees, and decorated with flowers and offerings, which they make at his shrine. These Marabouts' tombs are to be seen in various parts of the country, and testify to the extent to which this superstition has spread among the mass of the population.

THE INHABITANTS; THEIR MANNERS, CUSTOMS, DRESS, &c.

WHEN the French expedition went out to Algiers, it was accompanied by an intelligent engineer, M. Rozet, in the capacity of Geographical Engineer to the expedition. This gentleman has published an interesting account of Algiers, drawn from his own observation, and we shall take him as our chief authority on the subject of the native inhabitants of Algiers.

M. Rozet distinguishes seven separate classes of persons who form the population of Algiers, viz., *Berbers*, *Moors*, *Negroes*, *Arabs*, *Jews*, *Turks*, and *Koulouglis*, all of whom have habits and characters different from one another. We will consider them in the above order.

BERBERS. These are supposed to be the descendants of the ancient Numidians, who were a mixture of the aborigines of North Africa, and some Persians and Armenians who settled there in remote ages: they are, in fact, the most ancient inhabitants of Algiers, and have still kept a footing in the land, throughout all the eventful scenes which have occurred there.

The Berbers are about the middle height: their complexion is brown, and sometimes almost black, with brown and glossy hair. They are thin, but extremely strong and robust. Their bodies are beautifully formed, and there is an elegance in their attitudes only to be found in antique statues. The head of the Berber is rounder than that of the Arab, and the features shorter, but of an equally marked character, although the fine African nose, so common among the latter, is not often seen among the Berbers. There is in their countenances an expression of savageness, and even of cruelty; but they are active, and extremely intelligent: they are also of a social temper, and endowed with good capacities. The language of the Berbers is said to have no connexion with any other known tongue. Such of this people as inhabit the northern side of the little Atlas (a small chain of mountains between the great Atlas and the sea), and often mingle with the Arabs, speak or understand Arabic; but those who dwell southward of the mountains understand no other language than their own. Many of them are often seen at Algiers, who do not speak a word of Arabic: in this city they are termed *Bedouins*, a name given to all the tribes who dwell in tents or temporary huts.

The Berbers often leave their mountains, to plunder travellers on the plain; and when they know a caravan is to pass they assemble in great numbers to attack it. They dwell in huts, consisting of a few stakes driven into the ground, with reeds or small branches of trees tied to them, and the whole covered with clay, mixed with a little straw. In some few instances their huts are built with rough stones, arranged with much art. These dwellings are rectangular, with two gable ends, and are covered with thatch or reeds: they are seldom more than ten feet high, and are entered by a low and narrow door, which shuts very close. The windows are small holes in the sides, which are sometimes covered with a piece of glass. Sometimes the huts are built in the midst of thickets, but in other instances a group of huts is situated in the midst of a plantation.

Although the Berbers have always lived in a state of barbarous ignorance, and have had but little connexion with civilized nations, they are a remarkably industrious people, and perhaps the most useful throughout all Algiers. By working the mines in their own mountains, they procure lead, copper, and iron. With the lead they manufacture bullets for war or the chase, and with the copper, ornaments for the women. It is even said that they work gold and silver: and it is true that their weapons are often ornamented with plates of silver, and they make an immense quantity of base silver coin, which they manage to circulate in Algiers. After converting their iron ore into malleable metal, they manufacture gun-barrels, implements of husbandry, and many rudely formed utensils, which they sell to the Moors and Arabs. They understand the manufacture of steel, from which they make knives, swords, and other sharp instruments.

The dress of the Berbers is very simple. The inner garment is a kind of short linen shirt, fastened round the waist with a cord. They have sometimes a sort of small cap on the head, and the chiefs wear *babouches* and red boots when they travel, although it is customary with the Berbers generally to go with arms and legs bare. Above the shirt, which somewhat resembles a Roman tunic, they wear the *haik*, which is a piece of white linen, about a yard wide, and five or six yards in length: in this they envelop themselves with singular ease and elegance. The *haik* passes round the head, where it is fastened by a band of brown linen. When the weather is cold, they wear a *bernous*, which is a kind of white linen mantle with a cape.

The costume of the women differs but little from that of the men. They do not wear the *bernous*, but throw the *haik* over the head without fastening it. They do not cover the face, like the Moorish and Arab women. They travel with bare heads and feet, their long hair floating in the wind, and every part of their bodies, especially the arms and legs, is decorated with designs in different colours, and of perfect regularity. They also stain red the nails, the palm of the hand, and the sole of the foot.

The Berbers are a warlike race, and have never actually submitted to the Dey of Algiers. They are divided into tribes, each of which is governed by a sheikh. They bear a character for great cruelty, both in their mode of making war, and in their general conduct to travellers. On the western coast they are constantly on the watch for vessels which approach the coast, and when one is stranded, they pounce upon it like a swarm of vultures, murder the crew, seize the cargo, and destroy the vessel. A few years ago, fifty French artillery-men fell into their hands, and were immediately cut up into small pieces, and thrown into a common laystall, and on another occasion, a French suttler was taken, and suspended by the feet from a palm-tree, until she died. They sometimes attacked the French in the following manner;—The horse-soldiers would come on at full gallop, and the infantry run with them, holding either by the saddles or the tails of the horses, and three men have often been seen holding by the same horse. When arrived at a certain distance, the horseman would stop, and the foot-soldiers would immediately collect round him. Each would then fire, withdraw with rapidity to reload his piece, and then return to the charge.

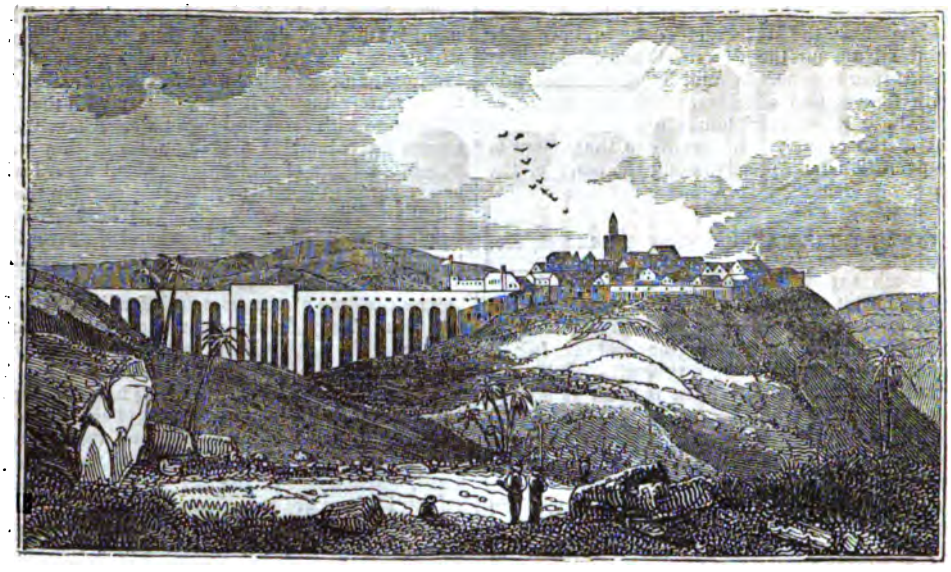
Altogether the Berbers are a formidable race, and what with them and the Arabs, the French are to this day scarcely able to quit the fortified cities of the Regency.

MOORS. The Moorish inhabitants of Algiers are almost as ancient as the Berbers, but different circumstances have given them rather a better position. Dwelling principally near the sea-coast, they have had more frequent communication with the inhabitants of Europe, than the Berbers, who are more inland. This, and the successive conquests of the country, have modified the habits and manners of this people, and in some degree altered the race. Having been subdued by the Arabs, and afterwards governed by the Turks, they embraced Mahometanism, and from that period their mode of life has differed little from that of the other followers of Mahomet.

From time to time a great many Europeans have intermarried with the Moors, and mixed races have resulted from the connexion; but the characteristics of the true Moor are sufficiently evident to lead to a correct description. The men are above the middle stature; their carriage grave and noble: they have black hair: their skin is a little swarthy, but rather fair than brown. Their faces are somewhat full, and their features are less strongly marked than those of the Arabs and the Berbers. The nose is generally rounded, the mouth of middle size, and the eyes very open, though not lively. They are muscular, and the bodies rather fat. The women are formed on a scale proportionate to the men: they have all black hair and beautiful eyes, and some of them are handsome. They never wear stays; and as excessive obesity is considered the perfection of female beauty, they do all in their power to become fat, and are, of course, very defective in shape.

The children of both sexes are extremely pretty. They have a mild expression of countenance, beautiful eyes, and a general intelligence of mind.

The Moors form the greater portion of the population of the Algerine states. They inhabit houses more or less costly in the towns and cities, and they also occupy some villages. A few of them live separately in the neighbourhood of the towns, upon small hills, or in the valleys and cultivated plains. These the Arabs and Berbers plunder, and



MEDEYA.

sometimes even murder, when they fix their residence too near that of those ferocious tribes.

The costume of the Moors does not differ much from that of the Turks. They wear turbans, and have large loose trousers, or culottes, fastened round the waist and above the knee. The upper part of the body is clothed in vests, embroidered in gold or silk, according to the rank of the wearer. During summer they generally go with bare arms, but at other times they have a kind of shirt, of which the sleeve reaches down to the wrist, where it is fastened. The Moors never wear stockings, but they have indifferent sort of shoes, which they call *babouches*. They wrap a long sash of silk or of coloured linen many times round the loins, and in this sash they carry their yataghan, poignard, pistols, and purse. They have almost always a pipe in the hand, and carry their tobacco-box in a convenient pocket. Those who have made the pilgrimage to Mecca, wear green turbans. During winter, and in bad weather, the Moors, as well as the Berbers, wear a *bernous*. They wear, besides, a capuchin, furnished with sleeves, which serves the purpose both of habit and hat; this capuchin is made of brown linen, and ornamented with little bits of coloured cloth, arranged in fantastical forms.

The women dress very differently from the men. They never wear stockings when they go abroad; but have ill-made shoes, and pantaloons of silk or of white calico, which are fastened on the leg and at the waist. They have robes made somewhat differently from those of the men. The hair is tied round with a band, and they have a small white handkerchief which, attached behind and brought round in front, conceals nearly the whole of the face. They then throw on a tunic of white linen, which covers the head; and a mantle worn outside their robe completely envelopes the hands and arms.

When they are within doors the Moorish women wear different dresses, according to their rank, and to the employments in which they are engaged. When busied in domestic affairs, they are slighty clothed, and go with bare legs and feet; but when they receive visitors, they display much of the magnificence for which Oriental nations are remarkable.

The Moors exercise almost every kind of mechanical employment; but are particularly indolent, and slow in their work. A jeweller, for instance, after beginning his work, will light his pipe, smoke for some minutes, and then, without taking the pipe from his mouth, will file a few strokes, then put down the work, then smoke in idleness a few minutes, then examine the work again, then file a little more, and so on.

The Moors possess the melancholy reputation of being the most immoral race on the face of the globe. Every kind of debauchery is practised among them; and they are so perfidious that not only can they not be trusted by other classes, but they distrust each other. The ties of nature are but little known among them; and on this subject M. Remaudot has related the following anecdote:—A Portuguese surgeon stated, that a Moor came one day to him from the country, and said, "Christian Barberos, give me some drugs to poison my father. I will pay thee handsomely for them." The Portuguese was at first astonished, and remained silent for a moment; but quickly composing himself, replied with a coolness equal to that of the Moor, "What! are you not on good terms with your father?" "On the best possible terms," replied the Moor; "he is an excellent man: he acquired a fortune, and has given me a wife, together with all the property he possessed; but he is now beyond labour, on account of his great age, and yet persists in refusing to die." "You do right to poison him," replied the surgeon; "I will give you something which will soon put him in the humour of dying." So saying, the surgeon prepared a cordial rather calculated to comfort the stomach of the old man than to kill him, and giving it to the dutiful son, received his money, and the Moor departed rejoicing. In a week's time, however, the peasant returned, exclaiming that his father was not yet dead. "Not dead!" said the surgeon, "well, we must try again." Another cordial was given—paid for—and, of course, with the same effect. In a fortnight the Moor returned again to the point, and informed the surgeon, with infinite simplicity, that instead of dying, the old fellow appeared to thrive upon the poison. He received another dose; but finally came to the decision that his father must be a saint, since he fattened upon poison.

MOORS

NEGROES. The Negroes have for ages past been purchased from the interior of Africa as slaves. The caravans which proceed on this errand into the interior, take with them hardware, blue cloth, and green and red broad cloths, of which they make immense profits, by bartering them for gold-dust and Negroes. Almost all the Moors, with the exception of the very poorest, possess slaves; but the origin of the free negro population in Algiers

INTERIOR GRAND COURT OF THE PALACE AT MEDEYA.

is due to the circumstance that a slave may purchase his freedom by money or services, and also that a rich Moor sometimes manumits all his slaves when he dies.

The free Negroes do not differ, either in dress or employment, very much from the Moors. Some of them are firework makers; others, musicians; and others derive no small profit from pandering to the superstitions of the Moors. There is one exhibition performed by the Negroes which is of so extraordinary a nature, that we must describe it at some length; it is called the *Djelep*.

The object of this is, to cause some particular person to be possessed of the evil spirit; since the Moors firmly believe that Satan gives a knowledge of future events to those who are possessed, and who may in their turn transmit their prophetic power to any other person.

The Djelep generally begins after the feast of Ramadan, and notice of it is given to such as are candidates for this demoniac knowledge. The candidates, who are principally women, proceed together with the principal actors in the ceremony, among whom are always an old man and an old woman, to a house devoted solely to the superstitious practices of the Negroes, where the intended prophets are put into a room well-provided with cushions and carpets, and the entrance to which is closed with a curtain. The old couple, assisted by some other persons, then throw into a lighted earthenware furnace a quantity of benzoin, and some other substances. But before this, they kill four hens, with the blood of which they rub all the joints of the candidates. They perfume them with the smoke arising from the drugs in the furnace, and afterwards dress them, each in a different manner. They clothe them in caftans reaching to the heels, and with belts and bonnets adorned with cockle-shells loosely fastened, so as to strike against each other when the wearers begin to dance. Twenty musicians then arrive, with rude and discordant instruments, and squat down on the floor, at one side of the room.

The Negroes who are already said to be possessed, and those who hope to be so, being all present, the musicians begin a frightful concert, and one of the possessed, or demoniacs, begins to dance. All the negro women accompany him in his dance, which is slow at first, but by degrees becomes animated and then furious. He now utters the most dreadful cries, and makes all sorts of contortions: this is the moment when the spectators hope to be inspired with the supernatural influence. They approach and throw some money, wax candles, bread, meat, or anything they please, upon a carpet spread to receive them. The music now increases in intensity and horrid discord; and the demoniac becomes more and more animated, until at length, overcome with the noise and the fatigue of his exertion, he falls senseless to the ground. His dancing companions then withdraw, and an old man brings forward the furnace, and perfumes his body. The instant the man falls, the music ceases; but he soon rises, the music resumes, and he proceeds with his dancing. He is again attended by other dancers, and goes on until he falls a second time; again he recovers and dances, and this continues until his strength is completely exhausted. The evil spirit is now said to be in the body of the demoniac.

The manner in which the spectators benefited by the exhibition, may be illustrated by a Djelep which M. Rozet witnessed. The demoniac was a strong young negress who was dressed in a caftan of green silk with yellow stripes, and her belt and cap were ornamented with shells and morris-bells. After dancing some time, the old negress put two large blunt poignards into her hands, with which she proceeded to strike herself in various parts of the body. She then threw herself in a dreadful fury upon a Moorish woman, whom she handled very roughly;—then rushed out of the room;—then returned, and continued to dance until she fell senseless. On recovering, she seized hold of one of the musicians, threw him down, and pressing his stomach against the ground, crossed his arms and legs, and tried to twist his neck. We need not proceed with these details of brutal fanaticism and imposture, but will remark, that those persons, who are ill-used by these pretended demoniacs, consider themselves very fortunate, and believe, that as the actions of the persons supposed to be possessed are directed by Satan, they shall assuredly participate in the knowledge of futurity which that person is supposed to have acquired.

Such is a picture of the shocking state of religion and morality among the Negroes and Moors of Algiers. It must be observed, however, that the free Negroes possess many qualities which elevate them among the Moors. The Dey and his lieutenants were always accustomed to entrust their more difficult commissions to Negroes.

ARABS. That portion of the Algerine population which consists of Arabs shows much the same features as Arabs in more eastern countries. From the time that the Arabs conquered Algiers, more than a thousand years ago, they have remained as part of the inhabitants, and have retained many of their peculiarities, although in some things they are amalgamated with subsequent conquerors. Some of the Arabs till the ground, and live in cottages, while others roam over the deserts, and adopt no particular dwelling-place. The Arabs are generally tall and well-formed, and the bodies tolerably fleshy. Their hair is black, their foreheads high, their eyes quick and piercing, the mouth and nose well made, the face oval, and the features rather long. Their skin is brown, sometimes olive. They are much more noble in battle than the Berbers or the Moors, since they do not torture their enemies when taken prisoners.

Those of the Algerine Arabs who lead a roving life have tents formed of a black and white stuff, made of cotton and camels' hair. The piece, which is very large, is fastened to stakes driven into the ground, and forms a tent in the shape of a prism, covering a space of about twelve feet long, and six or eight wide. This serves for a whole family, often consisting of a man, three or four women, and five or six children, who sleep in it upon mats, with the weaving-loom almost always set up in the middle. The wandering

tribes live under the rule of a sheikh, and encamp in regular order, their tents forming a circle, the intermediate space being allotted for their cattle. One tent in each tribe serves as a mosque (for the Arabs were the primitive Mahometans). These tents are pitched so as to admit a free circulation of air, which renders them very cool in summer. In this season the Arabs sleep either within their tents, or in the open air around them, and the flocks and herds also remain outside; but in winter the cows and sheep are shut up in the tents, with the owners, whom they help to keep warm. There are some tents formed of several pieces of stuff joined together, and which are able to shelter vast numbers of sheep and cattle.

The cabins, or huts, of those Arabs who cultivate the ground, are formed with branches of trees, and covered with straw or date-leaves. The cabins are never isolated, but are united together to the number of ten or a dozen, or sometimes more, forming thus a sort of little village, which is always surrounded by a hedge. In the middle of the village is a hut inhabited by the chief, and another which serves as a mosque. Each family has generally two huts, one for themselves, and one for their cattle; and the furniture of a hut consists of but little besides a few earthen vessels, some sheep-skins and matting for beds, some skin bags, to preserve milk and convey it in to market, an earthen lamp, a sort of spinning and weaving machine, and a corn-mill.

The costume of the Arabs bears a sufficient resemblance to that of the Berbers to render a description of it unnecessary, after having spoken of that of the latter-named tribe. The middle and left-hand figures below are Arabs.

ARABS AND A KOULOUGLI.

The Algerine Arabs believe that no one who is buried by a Christian will be admitted into Paradise. This idea explains a circumstance which occurred between the Arabs and the French. An Arab sheikh, completely armed, and mounted upon a beautiful horse, appeared one day before a small fort at Oran, and asked to speak to the commanding officer. The latter, suspecting some snare, went out attended by a corporal and two men. The moment the Arab perceived the French officer, he presented his piece, and would have shot him, had not the corporal on the instant fired, and killed the Arab, who was forthwith buried in the fort. The same evening some of his friends, although aware of his treachery, came to the fort, and entreated that his body might be given to them, but the officer refused, and they were forced to retire. Next day, a young negro woman, barefooted, with dishevelled hair, and weeping bitterly, obtained admittance to the officer, and implored that her master's body might be restored to her. When the interpreter informed her that her request could not be complied with, she fell on her knees, and kissed the feet of all present, but finding her tears and supplications of no avail, she rolled herself frantically upon the ground, uttering the most distressing cries, and the soldiers were obliged to carry her away by force.

It is probable that the Arabs are the most estimable, or rather the least despicable, of the Algerine people. They have certainly predatory and thievish habits, but they are free from the charge of licentious habits. Sobriety is one of their chief characteristics. Of all the Barbary tribes they eat the most frugally, and they scrupulously observe the injunctions of Mahomet against the use of fermented liquor. A few figs and some water will often serve them for a whole day.

Jews. The Jews of Algiers form a section of that extraordinary people which is scattered over the whole face of the earth, but without having a nation or a government anywhere. The Jews have a legend or tradition concerning their first settlement in Algiers.—"When the Moors possessed Spain, they allowed the Jews to settle among them, and carry on trade. The children of Israel, as in Egypt, became in a short time very numerous. They had their magistrates and their temples, and the free exercise of their religion. When the Christians drove the Moors from Spain, they allowed the Jews to remain in that country, and pursue the same avocations as before, on condition that they conformed to the laws of the new government. The Christians at length became jealous of them, and in 1390 the chief Rabbi of Seville, named Simon-ben-Smia, a man of great talents and possessing immense wealth, was arrested and thrown into prison, by order of the King of Spain, together with sixty chiefs of Jewish families. Immediately after this the Spaniards continued all sorts of excesses against the Jews, and plundered them without mercy. Soon after the incarceration of the Rabbi, the king ordered that he and his fellow-captives should be put to death. On the day before that fixed for the execution, and when those confined with the Rabbi were giving way to despair, Simon took a bit of charcoal, and drew a ship upon the prison wall: then turning towards the other prisoners, he said, 'Let every one here present who believes in Almighty God, and who wishes instantly to quit these walls, place his finger with me upon this ship.' All instantly did as Simon directed them, and immediately the drawing became a real ship, which began to move of itself: the captives got on board, the wall opened, the ship proceeded through the streets of Seville, without injuring one of its inhabitants, and went straight to the sea. The vessel afterwards anchored at Algiers, a city then inhabited by Moors and Arabs."

Such is this marvellous tale; and after we have stripped it of its miraculous trappings, we should probably find that the truth lies in these few words,—that the Jews, being persecuted by the Christians, flew to Algiers, to see whether Mahometans would treat them any better.

The Jews are the brokers of Algiers; the upper classes dealing with Europeans, and the lower with the Arabs, Moors, Berbers, &c. The way in which the dealings between an Arab and a Jew are conducted is this. As soon as an Arab arrives at one of the city gates with anything to sell, he is beset by a swarm of these brokers, each offering his services. The Arab continues his road without saying a word. If he is driving an ox or a cow to market, the Jews seize the animal: one takes hold of the tail, others of the horns and ears, and each pretends to a priority of right, by which a battle often ensues. Meantime the Arab looks on without emotion, and in no way interferes until his cow, or whatever he has, is sold: he then punctually pays the commission to the individual who has brought him the purchaser:—both the Arabs and the Berbers are extremely faithful in this latter respect.

The most distressed position in which the Algerine Jews have been placed, was when the country was under the military despotism of the Janissaries. Often when the Janissaries met them in the streets, they would beat and otherwise ill-treat them, without their daring to offer the least resistance; and their only resource was, to run away if they could. If any one among them dared to complain, the Cadi would ask the offending Turk why he had struck the Jew. "Because he spoke ill of our holy religion," would be the reply. This sealed the poor Jew's doom; he was immediately put to death, and his property confiscated to the State. When a Jew went to a fountain, he was obliged to wait until every Mahometan had left it, before he presumed to take a drop of water. A Jew passing before a mosque was often butchered by the populace, if he chanced to turn his head towards the sacred building. The Jews were excluded from all public places frequented by the Mahometans, with the occasional exception of the bazaars. When a Jew met a Turk in the street, he was obliged to salute him by bowing his head almost to the ground. The Turk would enter a Jew's house, eat, drink, insult the family, and take away anything he had a fancy to, without the master of the house daring to offer any remonstrance.

This dreadful state of persecution was somewhat mitigated under subsequent governments; but still Jews have always been treated at Algiers with the contempt which they so generally meet with in Mahometan nations.

The Jews generally inhabit the central parts of the towns. The houses of the rich Jews are often elegant and commodious; but those of their poorer brethren are often very wretched. Sometimes a dozen families will reside in the same house, and each family will have but one room, in which father, mother, and children sleep, cook, and live.

Turks. The slight sketch which we gave of the history of Algiers will convey an idea of the manner in which the Turks got a footing in that country. That footing they have ever since retained, subject to changes from different causes. The manner in which a supply of Turks was kept up at Algiers was curious, and likely to give an immoral and dissipated tone to Algerine society. The Deys for a long time acknowledged the Grand Sultan as their sovereign, and paid him tribute; requesting in return that he would send them Turks to recruit the army and navy, when they became thinned by war. This was assented to, and the Sultan took advantage of the opportunity to send away troublesome subjects. The Dey used to send a vessel annually to Smyrna, to bring away the new recruits. On the day of their arrival, each one was conducted to the Dey's palace, complimentary words were addressed to him, and a dress and a gold sequin given to him. They were then forced to take the Mahometan oath, ("There is but one God, and Mahomet is his prophet,") and they then entered the service of the Dey. It was out of such materials that the powerful Janissaries arose.

The Algerine Turks are generally fine-looking men, with a stern expression of countenance, strongly marked visage, and skin nearly as white as that of an European. Their manner of living is much like that of the Moors, with whom they may be seen mingled in the walks, in the coffee-shops, and in the barbers' shops. With regard to dress, they differ but little from that of the Moors. The Janissaries are, however, often clothed with much magnificence; the dress being of more brilliant colours, and more richly embroidered than those of the Moors; and the turban is often composed of a cachmere or other shawl, of delicate texture.

The Turks possess many country-houses in the environs of Algiers, situated in the midst of beautiful gardens stocked with flowers. Fields, enclosed with hedges, contiguous to each mansion, form the domain: these fields, as well as the gardens, are cultivated by slaves and Berbers. But the hand of a Turk never touches a spade or a hoe. Agriculture is with them, as with military tribes generally, considered a debasing employment. The Turks were never brought before the Moorish magistrates for any fault either spiritual or temporal. There was a Turkish cadi and a mufti in each town, to render justice to those of their nation; and whenever a cause was to be tried between a Turk and a Moor, an Arab, or a Berber, it was always brought before a Turkish cadi. In a country where even-handed justice is but little appreciated, it is easy to see that the Turk would come off best under such circumstances. All the other Algerines were punished openly for a fault, but when a Turk was to be punished, he was favoured by having spectators excluded. The person of a Turk was almost as sacred as a European king. To kill a Turk was a crime punished by burning alive, or impaling the offender. If a Turk were assassinated in a tributary town or province, the aga made arrangements for seizing the assassin; and if he failed in so doing, he took twenty or thirty heads of families in that town or tribe, and conducted them to the Dey, who generally beheaded them all, as a punishment for the crime of their townsmen. Two years before the taking of Algiers by the French, a Turk, who had gone to live for a short time among the Arabs, was found dead one morning in a morass. As soon as the neighbouring aga had notice of this, he sent a detachment of cavalry, who carried off forty fathers of families, and conducted them to Algiers. The chiefs of many neighbouring tribes united to petition the Dey for their release, protesting that the prisoners were innocent of the charge brought against them, and offering a sum of money for their ransom. The Dey, after having taken the money, and pretended to believe the asseverations of the chiefs, said, "You have only to go to the gate of Bab-Azoun, and you will find your friends."—They went, and did indeed find their friends, hanging by the necks!

These and many other circumstances prove that before the French entered Algiers, the Turks were by far the most powerful of the inhabitants.

Koulouglis. We have said that a supply of Turks was generally brought to Algiers every year, to fill up any vacancies that might have occurred; but these were always men, so that, if they afterwards married, not having a sufficient number of females of their own class in Algiers, they united themselves with Moorish females, or with such Christian slaves as preferred slavery under a husband to that under a master. The issue of the marriages with Moorish females are called *Koulouglis*, and are, as may be supposed, a kind of mixed race.

The children of Turks by Christian slaves have nearly the same privileges as the Turks themselves, but with the Koulouglis the same remark does not apply. They cannot enter the militia, nor rise to a high grade in the army. But still they are generally in easy circumstances, for the Algerine Turks are generally wealthy, from the share which they have in the prizes taken by the Corsairs, which wealth they are accustomed to leave to their children.

From the easy mode of life which the Koulouglis lead, they are rather effeminate and indolent in their character, although finely-formed men. Their dress and general manner of living are a medium between those of the Turks and the Moors, not so favoured as the one, but more so than the other. The figure on the right in p. 86 is a Koulougli.

MISCELLANEOUS OBSERVATIONS.

We will conclude with a few details which relate to the inhabitants generally.

The following anecdote will illustrate the superstition of the Algerines. While some French officers were observing a total lunar eclipse, on the 2nd of September, 1830, and when it was about the middle of the immersion, they heard shouts, and a great noise of kettles, shovels, tongs, and such like instruments. The mosques were all soon lighted, and the muezzins, mounting the minarets, began to chant in long trills. This racket continued the whole duration of the eclipse, and from time to time small blasts of powder were seen to be let off by groups of people. At the same moment many considerable fires were kindled on the ridge of the lesser Atlas, and the inhabitants were probably assembled round these fires, to make a noise like the Algerines. When the turmoil was over, singing commenced in the mosques. On the following day, inquiries were made respecting the cause and motive of the exhibition of the previous evening; when it was ascertained that the Mussulmans believe eclipses to announce the termination of the world; and the racket which they make during eclipses of the moon is intended to awake all sleepers, in order that they may go to the mosques, and join their brethren in the last prayer. It is to this that the muezzins invite them. During solar eclipses, as they do not suppose any one to be asleep, they make no noise, but content themselves by going to the mosque, warned by the voice of the muezzin, who announces the eclipse from the top of a minaret.

The schools in Algiers are all nearly of the same character. The pavement of the hall in which the school is kept is always covered with a rush mat: the master sits in a corner, with a long rod in his hand, and several wooden tablets are hung round the wall. School hours are from eight to eleven in the morning, and from one to four in the afternoon. Each scholar, as he arrives, takes off his shoes, which he leaves at the door, and then goes to kiss the hand of the master, who presents it to him with a gravity altogether Turkish; after which the scholar takes one of the tablets from the wall, and squats down on the mat. When all the scholars are settled, they form a semicircle round the master. They have usually a writing-desk between two, and each of them is furnished with a reed, shaped like a pen, for writing. To those sufficiently advanced, the master dictates some sentence from the Koran, which they write with ink on the wooden tablets. When a scholar has finished the sentence, he refers to the master, addressing him by the title *Sydi*, who then dictates another sentence. When the master has repeated the same things many times, and the scholar does not understand it, the rod is brought into requisition, and the master himself writes down the sentence. As soon as a scholar has finished writing, he presents his tablet to the master, who corrects and returns it to him. He then quits the circle, and, seating himself against the wall, proceeds to commit to memory what he has written, chanting it in a loud voice, and moving the upper part of the body, as the Mussulmans are accustomed to do at prayers. Towards the end of the sitting, all the children may be heard chanting together in different tones. For those who have not yet learned to write, the master chalks the letters on the tablet, and the scholar inks them over the chalk-marks. The scholars then, at eleven o'clock, kiss the master's hand, and go home. Returning at one, they engage

in learning more perfectly by heart what they have written in the morning, and before they leave, they rub out, first with pumice-stone, and afterwards with sponge and water, the ink-marks on their tablets, hang them up in their places, and then take leave.

This routine of education, together with a little arithmetic, comprises the whole education given to the children. The girls are not taught to read or write at all. The Jews have schools of their own, and attend more strictly to education, so that they are the best informed of the inhabitants, and always fill the office of interpreters.

A strict system of police was observed at Algiers under the native government. No one but a Turk was allowed to stir out after eight o'clock in the evening, under pain of the bastinado, which, however, could always be bought off, if the offender were rich. Every one was obliged to have the space before his own house swept, and the dirt placed in the cavities of which we have spoken. Bedouins and Moors passed every day with asses laden with panniers, in which all the dirt is removed. Those who neglected this were bastinadoed. Weights and measures were strictly looked to by the police. Any one found using a false standard had his left hand chopped off, and tied round his neck. He was then placed on an ass, and led round the city. There are many persons to be seen in Algiers with no left hand.

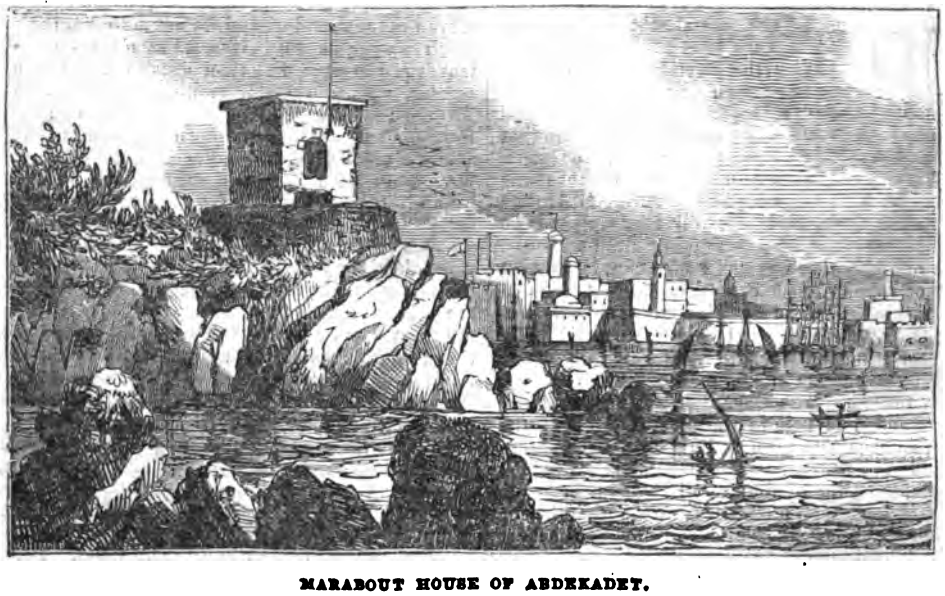
The system of begging is carried on to a great extent at Algiers; but it is very dangerous to be charitable; for if a person continues to give day after day to any particular beggar, the latter deems it a vested right, and summons the donor to the cadi if he stops his alms-giving, and the cadi generally sides with the beggar under such circumstances. An European merchant was in the habit of giving two *mouzonnes* daily to a poor beggar, who, in return, used to offer up prayers for the merchant. It happened that the merchant went to Europe, where he was detained more than a year. During his absence, the beggar continued to present himself every day at the door, though he had nothing given him. When the merchant returned, he found his faithful beggar, who expressed the satisfaction he felt at seeing him again, and assured him that every day he repaired to his post, and had not failed to offer up a prayer to heaven for the preservation of his health. The European thanked him, and gave him two *mouzonnes*, as before. "You forget then that for a year you have given me nothing," replied the beggar. "It is not two *mouzonnes* that you owe me, but more than seven hundred, because ever since you set out, I have not missed a day in going to your door, and offering up a prayer for you as before." This was a mode of reasoning by no means palatable to the merchant, and he refused to accede to it; whereupon the beggar summoned him before the cadi, who, having heard the parties, pronounced thus: "If this beggar had neglected to present himself every day at your house, you might have protested against his demand; but he has punctually acquitted himself of his duty, and you legally owe him the sum which he demands."

There is near Algiers a fountain named *Sydi-Yakoub*, which has a reputation for holiness, and for being able to cure all sorts of diseases. M. Rozet witnessed the ceremony performed, when this fountain or well was visited. About six o'clock in the morning a large party, both of Jews and Negroes, stopped at the well. The women took off their slippers, and, taking baskets which their husbands had laid on the ground, advanced with much respect up to the fountain. Each one then took from her basket a common earthen pot, in which she kindled a fire with tinder and charcoal. They then lit a small yellow taper, and placed it on a stone, beside a little hole from which a jet of water was spouting out. Having done this, they threw some grains of incense on their censers, and taking them in their hands, passed several times before the fountain, perfuming it. Returning to their baskets, some took out eggs, boiled beans and bread, others feathers, chicken's blood, &c., which they threw into the basin. Finally they placed themselves on the lowest step which was immersed in water, washed their faces and hands, drank and gave drink to their infants, and then went to rejoin their husbands. They then all retired to the seashore, where they began a career of eating, drinking, singing, and merry-making. On being asked the meaning of all this, they said, that after having implored the aid of *Sydi-Yakoub*, it was necessary to spend the whole day in eating, drinking, and revelry, in the open air. On visiting the spot in the evening, it was found that the devotees had fulfilled their intentions to the letter. The whole place was filled with groups of families, in which every one had drunk so much as to be unable to stand upright.

The shops of Algiers contain the usual articles met with in towns, and are kept principally by Turks and Moors. But the Dey and the Jews have the principal part of the commerce with foreign countries. The exports are principally essence of roses, silk stuffs, embroidered Morocco leather, taffeta, vermilion, ostrich-feathers, grain, wax, honey, and fruits. Their principal imports are linen cloth, muslin, calico, silk, hardware, sugar, coffee, amber, white marble pillars, pavements, and tombs, and iron and steel goods. They have a tolerably extensive manufacture of pottery, of which they prepare a variety of vessels.

ALGERINE VESSELS.

We must now conclude. There are, of course, abundant materials for extending our notice of Algiers; but we have endeavoured to select such prominent features as would serve to convey a general idea of the country—its history—its towns and buildings, and the character of the various classes of its inhabitants.



MARABOUT HOUSE OF ABDEKADER.

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OLD ENGLISH MANSIONS.

THE HALL, AT OCKWELLS, IN BERKSHIRE.

OCKWELLS, IN BERKSHIRE.

Is there anything which conveys us back, in imagination, more completely to the olden times, than the sight of one of our old baronial residences? We fancy we see the squire, the "old English gentleman," surrounded by his family and dependants;—the hall, hung about with trophies of the chase;—the open fire-places, with the wood fires;—the old, lumbering, but roomy, family coach;—and then, on Sunday, the squire, a true Sir Roger de Coverley, going to church in the midst of his humbler neighbours, who regard him as a protector, as a sort of second father. The old squire, too, was member for the county, and we see him undertake the momentous enterprise of a journey to London, to attend his parliamentary duties. All this, and much more, the mind can picture, when an old family mansion is before us. Perhaps no publication ever contributed more to this effect than a splendid work recently produced by Mr. Nash, under the title of *The Mansions of England in the Olden Time**. This is not a mere architectural work: the old apartments are peopled with inmates of by-gone ages, the object being, to use the author's remark, "to represent the stately homes of England, glowing with the genial warmth of their firesides, and enlivened with the presence of their inmates and guests, enjoying the recreations and pastimes, or celebrating the festivals, of our ancestors."

It is from one of this series of plates that our frontispiece is, by permission of the publisher, taken. It represents *Ockwells*, an ancient mansion, situated about a mile westward of the village of Bray, in Berkshire. The village of Bray has acquired a sort of notoriety, to which its importance would not have entitled it. The living is a vicarage in the diocese of Salisbury, but in the patronage of the Bishop of Oxford. This living was once held by a "Vicar of Bray," who has been handed down to posterity for having frequently changed his religion. As different versions of the circumstances have been given, we will quote from FULLER'S *Worthies*, where, we believe the account was first given:—

But first we will despatch that sole proverb of the county of Berkshire, viz., *The Vicar of Bray will be Vicar of Bray still*. Bray, a village well known in this county, so called from the Bunnocens, a kind of ancient Britons inhabiting thereabouts. The vivacious vicar hereof, living under King Henry the Eighth, King Edward the Sixth, Queen Mary, and Queen Elizabeth, was first a Papist, then a Protestant, then a Papist, then a Protestant again. He had seen some martyrs burnt (two miles off) at Windsor, and found this fire too hot for his tender temper. This vicar being taxed by one for being a turncoat, and an unconstant changeling,—"Not so," said he, "for I alwaies kept my principle, which is this, to live and die the vicar of Bray." So many new adayes, who though they cannot turn the wind, will turn their mills, and set them so, that whensoever it bloweth, their grist shall certainly be grinded.

But to return from Bray to the old mansion in its neighbourhood. *Ockwells* used formerly to be called *Ockholt*. The manor called by this name is much more ancient than the manor-house at present existing. We are told that in the year 1267, Richard de Norreys, took to Eleanor, queen of Henry the Third, had a grant of Ockholt from that monarch, subject to a fee-farm rent of forty shillings: the grant states it to have been an encroachment from the forest. The next circumstance we hear respecting the manor is, that John Norreys, Esq., most likely a descendant from the Richard just named, made a will, in 1465, in which he stated that Ockholt, or Ockwells House, was built, but not quite completed by him up to the year when the will was made. This John Norreys was first Usher of the Chamber, next Esquire of the Body, and afterwards Master of the Wardrobe to King Henry the Sixth; also Esquire of the Body to King Edward the Fourth. In his will he left a certain sum "to the full building and making uppe of the chapell, with the chamber adjoyning, within my manor of Ockholt, in the parish of Bray, not yet finished." This is the manor-house now existing.

The next mention we find relating to the manor is, that Sir William Norreys, who was commander in the king's army at the battle of Stoke, died seised of this estate in 1507. From the family of the Norreys, it appears to have passed into the hands of the Fettiplaces. After this, it was possessed by the family of Day, one member of which, Sir Thomas Day, bore the not very enviable reputation of being the keenest hunter, and the hardest drinker in the county of Berks. The manner in which he acquired his knighthood was curious. Although a tolerably rich man, he was plain Thomas Day, a farmer. He used frequently to join in the royal hunts, and more than once spurred on and opened gates or tore up a hedge, for Queen Anne to pass. This attracted Her Majesty's attention; she thanked him, and asked him his name. He replied, "Thomas Day, happy to serve your Majesty." The Queen said, "Well, sir, I will make you a knight in token of my gratitude." She called for a sword, which was given to her: Mr. Day then knelt on one knee, and the Queen said, "Rise up, Sir Thomas." A writer in an old volume of *The Gentleman's Magazine* says:—"My father has often, when I was young, riding out with him, shown me the gate at which Sir Thomas Day was knighted."

The manor of Ockwells then passed into the family of Finch, of Hertfordshire; and from this family it passed to Peayston Powney, Esq. M.P. for Berkshire. About sixty years ago a considerable portion of the manor-house was burnt down, by a beggar shaking out the ashes of his pipe amongst the straw of the farm-yard. The portion now existing is a farm-house, in the possession of John Shackell, Esq.

Such is a brief notice of the history of this remarkable old building. The house itself presents a very curious specimen of the mansion-houses of the gentry of the age in which it was erected; indeed it is considered as the most perfect of the few remaining; the numerous gables which present themselves are particularly beautiful. The hall—the most considerable room in the building—has lost somewhat of its original effect by having the carved roof concealed by a flat ceiling; but the panelling of the walls is still preserved. The most striking part of this hall is the large window, of six bays filled with stained glass, and which appears to be nearly in as complete a state as when the house was first erected. These windows are chiefly occupied with coats of arms, having crests and lambequins, one in each window, on a ground of diagonal stripes, containing flowers and mottoes in text hand, placed alternately. Among the arms are those of King Henry the Sixth, with the antelopes, his supporters; and of his queen, Margaret of Anjou, with her supporters, the antelope and eagle; also the arms of Norreys, with beavers for supporters; the Abbey of Westminster; Beaufort, Duke of Somerset; Edmund, last Earl of March; Henry, Duke of Warwick; De la Pole, Duke of Suffolk; Sir William Beauchamp, Lord St. Amand; Sir William Lacon of Bray, Chief Justice of the King's Bench; the Lord Wenlock; Sir Richard Nanfan, Captain of Calais; Sir John Pury, Knight, of Chamberhouse Castle, in the parish of Thatcham; and of one or two other distinguished personages.

* *The Mansions of England in the Olden Time.* By JOSEPH NASH, A.D. 1839. Published by T. M. M'Lean, Haymarket, London.

Among the coats of arms here mentioned, the most curious are those of King Henry the Sixth, Queen Margaret, and the house of Norreys. In the window, or compartment containing the first, there is the Imperial crown with the arms of England beneath; and at stated distances down the window are repetitions of the motto

Dieu et mon Droit

running obliquely downwards from left to right. In another compartment, devoted to Queen Margaret of Anjou, there is the crown of the Queen Consort, with the arms beneath, and, running from left to right at stated distances, as in the last instance are repetitions of the Queen's motto

Humble et Loiall.

In the compartment of the Norreys family, there are the family arms, and numerous repetitions of the family motto

Playnfully Serue

with the name *Norrys* at the left hand bottom corner.

Mr. Nash has represented this old house in three different points of view. He has given an exterior view of the front, where, in order to bring back reccollection of olden times, he has represented the bridal procession of a country gentleman in the time of Elizabeth, with preparations for the entertainment of the retainers. In another plate, the interior of the hall is given, with the style of hospitality shown to courtly guests: the squire and his lady are seated after dinner, at the "*oreille*," or high table, on the "dais," a part elevated a little above the floor, in the bay; the visitors of inferior rank being placed at the long table: at such an hour as this the attendance of a harper was not unusual. In a third plate, Mr. Nash has represented the porch and corridor, which are very characteristic from their extreme simplicity and quaintness. "Altogether," says Mr. Nash, "this house is well deserving the attention of the architect as well as the antiquary; for it offers many features that might be adapted to the present style of building country residences of moderate dimensions."

ENGLAND! with all thy faults I love thee still,
My country! and while yet a nook is left,
Where English minds and manners may be found,
Shall be constrained to love thee. Though thy clime
Be fickle, and thy year most part deformed
With dripping rains, or withered by a frost,
I would not yet exchange thy sullen skies,
And fields without a flower, for warmer France
With all her vines; nor for Ausonia's groves
Or golden fruitage, and her myrtle bowers.
To shake thy senate, and from heights sublime
Of patriot eloquence to flash down fire
Upon thy foes, was never meant my task;
But I can feel thy fortunes, and partake
Thy joys and sorrows, with as true a heart,
As any thunderer there.—COWPER.

No man was ever so completely skilled in the conduct of life as not to receive new information from age and experience; insomuch that we find ourselves really ignorant of what we thought we understood, and see cause to reject what we fancied our truest interest.

A PERSON accustomed to a life of activity longs for ease and retirement, and when he has accomplished his purpose, finds himself wretched. The pleasure of relaxation, indeed, is known to those only who have regular and interesting employment. Continued relaxation soon becomes a weariness: and, on this ground, we may safely assert, that the greatest degree of real enjoyment belongs, not to the luxurious man of wealth, or the listless votary of fashion, but to the middle classes of society, who, along with the comforts of life, have constant and important occupation.—ABERCROMBIE.

ON BANDANA HANDKERCHIEFS.

A RIVALRY of a remarkable kind has arisen within the last fifty years, in the production of certain woven fabrics. The Hindoos are celebrated above the natives of almost every other country, for the delicacy of their sense of touch, and the general suppleness of their limbs. This delicacy and suppleness have shown their influence in the beautiful muslins and similar articles, which for ages they have been able to produce. The spinning and weaving carried on in India are effected in the rudest possible manner, so far as regards the machines and implements employed; and yet the productions have excelled everything which the more cultivated natives of Europe could produce, principally on account of the manual dexterity, neatness, and quickness, possessed by the Hindoos.

But when the great improvements in our machinery increased the power of the manufacturer, the peculiarities of Indian manufacture became fully equalled by home production. One instance of this was in muslins, a very fine sort of calico or cotton. Formerly nothing could be procured in England equal in fineness and beauty to the muslins produced in India. This is no longer the case: our manufacturers can now produce muslins fully equal in every respect to the best productions of the Hindoo loom. The cost and celerity of production we do not here allude to: those are undisputed points: we speak of the actual quality of the material.

Another instance bearing on the same question is the production of *Bandana Handkerchiefs*, a subject that will afford us interesting materials for the present paper. The term *Bandana* is of Indian origin, and was applied to a peculiar kind of pocket handkerchiefs, both of silk and of cotton, made in India. These handkerchiefs were much sought after throughout Europe,—probably from the circumstance that nothing equal to them could be produced in Europe. The ground of these handkerchiefs was usually of red, blue, or purple; and the pattern almost always consisted of spots, either white or yellow. The colour with which the handkerchiefs were dyed, was uncommonly permanent and enduring.

The demand for these handkerchiefs being very general, British manufacturers were induced to try how far they could produce successful imitations of them in cotton, which might be sold at a low price. The first attempts to produce this were very imperfect, being the common mode of *printing* calicoes, which we may here briefly explain. Suppose the pattern to be produced were a blue ground, with white spots arranged in a determinate pattern. A piece of white calico or cotton was taken, and spread out on a table or bench properly arranged. A wood block was carved or cut in such a way, that raised or uncut parts were left for all that portion of the pattern which was to consist of the blue ground, while all the parts which were correspondent to the white spots were cut away. The block was then laid down on a board wet with blue dye,—either of indigo or some other blue-producing colour,—by which a layer of blue dye or ink was taken up on the raised parts of the carved block. This was then stamped down on the cloth, thereby leaving a blue ground on the cloth, relieved by white spots where no dye had touched the block. The whole process is indeed very similar to those of wood-cut engraving and printing.

There are many reasons why such a plan is wholly inadequate to the production of a good dye; and even with the aid of many improvements that have since taken place, both in dyeing and in calico printing, a good imitation of Bandana handkerchiefs

could not possibly be produced by such means. The colours, particularly the red, were found to be far from durable as thus produced.

A very important discovery relative to the nature and properties of *Chlorine*, led the way to a different mode of attaining the desired end,—a mode as beautiful in a scientific point of view as it is economical when considered commercially. The parties who contributed more or less to those improvements which led to the production of beautiful imitation Bandanas were many; but the firm of Monteith and Co. at Glasgow are most eminently connected with the subject. We shall now, therefore, describe the machinery and the processes by which these manufacturers produce handkerchiefs, of which the colours are as glowing and durable, and the white spots as pure and finely outlined, as any of the productions of the East.

The first operation is to dye the piece of cotton of the required colour, and in the best manner which the art of dyeing can present.

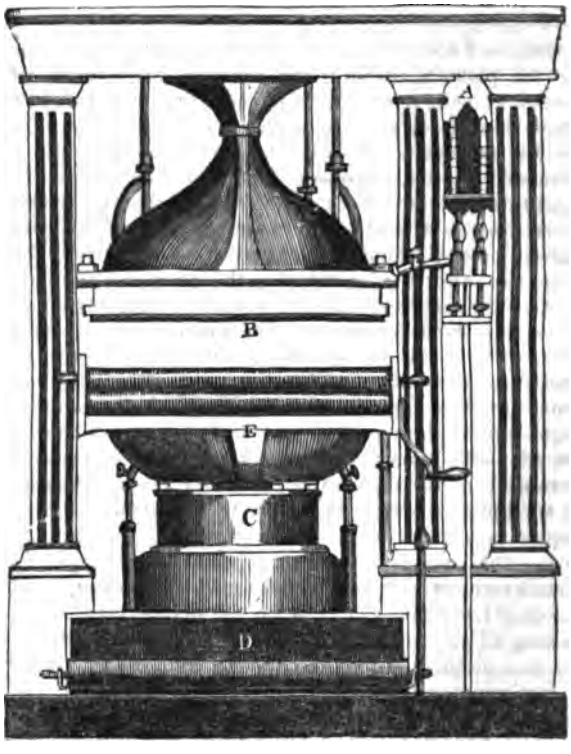
The most difficult colour to impart is Turkey or Adrianople red, a colour which for a long period could not be equalled by either British or French dyers. The oriental method of producing the Turkey red gradually found its way to Greece, and from thence to France. M. Papillon then brought over the method to Glasgow, where, in course of time, it became publicly known, and the house of Monteith and Co. soon became celebrated for the beauty of the Turkey reds produced there. The mode of dyeing is far too intricate for us to detail here, but we will merely mention that the dye is produced chiefly by the use of *madder*.

Now the great principle by which the Bandanas are produced from the peice of red or blue cotton, is by *removing* the colour from certain round or square spots disposed in a pattern over the surface of the cotton. This we are enabled to do by the peculiar property, possessed by *chlorine*, of removing colour of almost every kind, and under almost any circumstances. If a solution of chloride of lime (which derives its peculiar bleaching value from the chlorine contained in it) be dropped on the dyed cotton, the colour would be removed from that spot. The question is, therefore, how can the chlorine be so applied as to remove the colour from a regular series of spots, all symmetrical in shape and well ordered? This is effected by shielding the whole surface of the cloth with a piece of sheet lead through which are cut a series of holes into which the chlorine solution can flow. These plates are prepared by laying a very smooth piece of sheet lead on a thicker piece of the same metal: a piece of drawing paper is laid on the lead: the desired pattern is drawn on the paper; and a man cuts out both paper and lead by making perpendicular cuts quite through both of them into the lower sheet of lead. Perforations are made through the lower piece of lead, corresponding to those in the thin one, so that if a piece of dyed cloth were placed between them and powerfully pressed, and a chlorine solution were poured on the upper plate, it would pass into the holes in the upper plate,—through the cloth,—and out by the holes in the lower plate.

Now the object to be attained here is, to prevent the cloth, whether of one or more thicknesses, from being touched by the solution in any part except where the designed spots are to be. This can only be attained by intense pressure; for we know how soon a liquid will spread sideways among the fibres of a piece of cloth. There are many ways of producing intense pressure; but the one that is found most available for this purpose is that of the hydrostatic press. As the principle of that beautiful machine is described in a recent article*, we need not detail it here, but shall proceed to show how it is brought to bear on the manufacture with which we are at present concerned.

At Monteith's factory, the hydrostatic arrangement is contained in one room, called the machinery room, and the presses, with the handkerchiefs, &c., are in another, and there is a communication between the two. Fourteen thicknesses of cloth are operated on at once; and there are sixteen different presses arranged in a row, occupying a space one hundred feet in length, so that 224 pieces of cloth are being treated simultaneously. The hydrostatic arrangement consists of two cylinders, one eight inches in diameter, and the other one inch, to which are attached three little force pumps, worked by a steam engine. The difference in the diameters of the two cylinders produces the pressure, on the principles explained in the paper just quoted.

We must now illustrate these details by a cut, which represents one of the sixteen presses contained in the Bandana gallery.



BANDANA HANDKERCHIEF PRESS.

B and E are the upper and lower parts of the press, comprising the perforated plates through which the bleaching liquid is to pass. The size of these plates is about equal to that of a pocket handkerchief. Fourteen pieces of cloth are laid quite flat and parallel, one on another, and rolled on a beam at the back of the press. From this beam sufficient cloth is drawn out to cover the lower plate and receive the chlorine liquor, and after having thus been operated on, it is drawn between the rollers seen a little above and in front of the lower plate E, and from thence falls into a cistern of water D, at the lower part of the press. Supposing a layer of handkerchiefs to be placed on the lower plate E, that plate has to be lifted up, in order to meet the upper plate. This is effected by opening a communication between the 8-inch cylinder of the hydrostatic press and a cylinder, C, beneath the lower plate. As the 8-inch cylinder is loaded with a weight of five tons,

* See *Saturday Magazine*, Vol. XVI., p. 69.

the cylinder C is driven up by the same power. But when it is driven up so far that the handkerchiefs lying on it meet the upper plate, then an enormous pressure is brought into action, to press the handkerchiefs tightly together. This pressure is produced by shutting off the communication with the 8-inch cylinder, and opening that with the 1-inch cylinder. The 1-inch cylinder is also loaded with a weight of five tons, and as the cylinder C is about eight inches in diameter, it can be proved, according to the laws of hydrostatic pressure, that the lower plate becomes pressed against the upper one with a force of 5 tons $\times 8^2 = 320$ tons $= 716800$ lbs. By this intense pressure the handkerchiefs are held so tightly together, that any fluid passing down to them through the perforations in the upper plate, cannot spread laterally.

All is now ready for the admission of the aqueous chlorine. This is prepared in an adjoining room, and admitted to a small leaden cistern, A, at the side of each press, which is provided with graduated tubes, by which the quantity admitted at one time can be regulated according to the number of spots in the pattern of the handkerchief. The liquid is allowed to flow through a pipe into the upper part of the press (which is fixed): it then flows through the perforations in the plate B, through the fourteen thicknesses of handkerchiefs, removing from them the Turkey red or other dye in its passage, and after passing through the perforations in E, finally leaves the press by pipes arranged for that purpose. The liquor is allowed to remain a few minutes to act on the cloth; after which it is drawn off, and clean water is allowed to pass through in a similar manner, to wash away the chlorine, otherwise on relaxing the pressure, the outline of the figure discharged would become ragged.

So admirable are the arrangements, that four men are sufficient to manage the whole sixteen presses, and keep them all working at once. They first go from press to press, admitting the water from the eight-inch cylinder, by which the lower plate is raised:—the layer of handkerchiefs in each press is arranged in its proper place:—the powerful pressure is then put in operation to them all:—the chlorine liquor is admitted:—the cleansing water is admitted:—the presses are again opened:—the layer of handkerchiefs is drawn between the rollers, and another layer brought between the plates; and so on, taking all the presses in succession. No time is lost by this method, since the chlorine requires to act for a few minutes on the handkerchiefs in each press. When fourteen pieces are entirely finished, they are carried away to the washing and bleaching departments, where the lustre of both the white and the colours is considerably heightened. By the excellent arrangement of the sixteen presses, 1600 pieces, consisting of 12 yards each, equal to 19,200 yards, are converted into Bandanas in the space of ten hours, by the assistance of four workmen.

The reader will then understand that it is by such a mode as this that are produced those red or blue handkerchiefs with white spots, in which the threads of the material are so thoroughly acted on, that both sides of cloth present almost precisely analogous appearances. The cloth is first dyed all over; and the colour is then driven out from those parts which are to form the spots of the pattern.

Each power that sovereign Nature bids enjoy,
Man may corrupt, but man can ne'er destroy.
Like mighty rivers, with resistless force
The passions rage, obstructed in their course
Swell to new heights, forbidden paths explore,
And drown those virtues which the' fed before.

Brown.

THE NATURAL HISTORY OF THE MONTHS.

III. March.

Sturdy March, with brows full sternly bent,
And armed strongly, rode upon a ram;
The same which over Hellespontus swam;
Yet in his hand a spade he also hent,
And in a bag all sorts of seeds ysame,
Which on the earth he strewed as he went.—Spenser

This month was the first of the year among the ancients; and not without reason, for they had the sanction of a divine command in this respect. The period of the Vernal equinox was prescribed to the Israelites for the commencement of their sacred year, and all the great festivals ordained by their law were regulated by it. Their civil year began in September, and is still considered to begin at that time by the Jewish people. The English year began at one time in March; but, by an Act of Parliament, passed in 1752, it was determined that the year should henceforth commence on the 1st of January. The Spring or the Autumnal equinox appears the fit time for commencing the year, but it is difficult to assign any reason for the choice of January as the opening month.

The Romans named this, the third month of our year, in honour of Mars, the god of war; perhaps from the fierce and blustering winds generally prevalent at its commencement. These winds are often piercingly cold, coming in from the east for many days together; and frequent and loud are the complaints made against the severity of the weather during this month. But trying as the season may be to aged persons and invalids, it is essentially necessary in such a climate as ours, that after the snow, and rain, and thaws of February, the superabundant moisture of the earth should be dried up, and the soil prepared for ploughing, and sowing, and receiving, with due effect, the warm sunshine and Spring showers. So much, indeed, does the value of the future harvest depend on dry weather at this season of the year, that the proverb is not inappropriate which declares, "a bushel of March dust is worth a king's ransom." And as to the terrors of an east wind, which many persons in perfect health are fearful of exposing themselves to, we may borrow the remark, that "the oftener we meet it firmly, the less it will shake us, and the more smiles we shall have from the fair months that follow."

The Winter birds of passage now begin to leave our shores. These birds quit the North of Europe, when that region becomes "ice-bound, firm as a rock," and take refuge in our more temperate climate. The field-fare, red-wing, and woodcock are of this kind, the reason of whose arrival here is evident, but as to their departure, it is not so easily accounted for why they should prefer retiring to spend their Summer in Norway or Sweden to remaining with us. If they can find food here in the Winter, they certainly would not want for a full supply in Summer; and if they were impatient of warmth, they would not quit us at a time when it is much cooler here than they would find a Lapland Summer to be. If we are thus deprived of our Winter visitants, we are soon to be amply compensated by the arrival of others from the South, who shall "cheer the woods and valleys with their ceaseless songs," and gladden our hearts with the well-known melody of Spring. The industrious but thievish tribes of rooks now begin to repair their old nests, or to construct new ones. The rookery is a scene of bustle and contention; loud and angry cawings are heard on all sides, and it affords no small

amusement to watch for a time their numerous tricks and artifices. The exercise of the plough, which now begins to be extended on all sides, affords an ample supply of food for these birds; and so bold and fearless are they in pursuit of the worms and other insects turned up by it, that they follow close in the train of the ploughman, sometimes darkening the field by their numbers. The voice of the ring-dove is now occasionally heard. Young lambs come forth in mild weather, and make a feeble, tottering attempt at playfulness. Many of them are often weak and sickly, and in need of such care as is thus recommended by Dyer in his poem of *The Fleece*:—

> Be nimble, and the weakest, in thine arms,
> Gently convey to the warm cote, and oft
> Between the lark's note, and the nightingale's,
> His hungry bleating still, with tepid milk;
> In this soft office may thy children join,
> And charitable habits learn in sport;
> Nor yield him to himself, ere vernal airs
> Sprinkle thy little croft with daisy flowers.

Reptiles now begin to wake from their long sleep, and bats are seen flitting about; bees sometimes venture from their hives, and thus assure us that the season of flowers is not far distant. This is the period when the young botanist should commence his studies. He should mark the little peeping plants as they first look out from some sheltered spot, and make himself acquainted with some of them ere the season pours in all its abundance, and bewilders him with its vast variety of forms. There is the primrose, the daisy, the celandine, and sometimes the violet, for his examination, and besides the catkins of the hazel, there are those of the alder, and the sallow, which are extremely beautiful. In our sheltered gardens we now have crown-imperial, fritillaries, hyacinth, narcissus, scarlet ranunculus, great snowdrop, &c., mezereon, hepatica, and anemone.

> Now Winter, lingering on the verge of Spring,
> Retires reluctant, and from time to time
> Looks back, while, at his keen and chilling breath,
> Fair Flora sickens.

On the twentieth of this month the sun enters the constellation Aries, or the Ram, which is the first zodiacal sign; and this day is the first day of Spring. About this period, the ancient Romans celebrated their *Ludi Floreales*, or annual games in honour of Flora, accompanied by supplications for beneficent influences on the grass, trees, flowers, and other products of the earth, during the year. The Greeks had ceremonies of a similar nature, on the first coming of Spring. Between forty and fifty years ago, this season was celebrated at Eisenbach, in Saxony, with a curious allegorical representation. The inhabitants formed themselves into two parties: one party had the care of a grotesque figure, representing *Winter*, the other that of a youthful one, called *Spring*, or *Summer*. Winter appeared as an old man, covered with straw; and, after having been formally doomed to exile, he was carried by his party beyond the precincts of the town; while, on the other hand, the merry companions of Spring, having decked him with green boughs, and formed themselves into regular order of procession, advanced towards the town, singing national ballads, in praise of the season; here they were joined by those who had been executing the sentence pronounced upon Winter, and various festivities closed the day. These customs have since been greatly altered; and nothing remains of the festival of Eisenbach, but a sort of conciliatory offering to Spring, consisting of nosegays and sprigs of evergreen, with birds and eggs, emblematical of the season. A practice something like that of the people of the people of Eisenbach was common in this country, in ancient times. Figures representing Winter and Summer were made to fight, and Summer of course gained the victory. Summer was

> Apparelde all in greene, and dreste
> In youthful fine array;
> The other, Winter, cladde in mosse,
> With heare all hoare and graye.

We might multiply instances of the ancient customs of different countries on the coming of Spring, but we prefer rather to return to the consideration of the vegetable world, and to the delightful tokens of renewed life and beauty, which, in ordinary seasons, fail not to greet us towards the end of this month. The buds of most trees and shrubs are swelling, and in some instances the leaves begin to expand, especially in the elder, lilac, honeysuckle, and rose. The various species of fir, pine, and larch, are now in full flower; the meadows wear a livelier green; the sheltered garden begins to give promise of autumnal treasures; apricot, cherry, peach, and nectarine trees put forth their delicate blossoms, some snowy white, others tinged with a beautiful pink colour. Anxiously does the lover of his garden eye this early promise, and much does he fear that the effects of frost or cankering blight, or driving storms, may wither up and destroy the incipient fruit. He narrowly observes each morning what has been the effect of the night's frost on his favourite trees; carefully removing the covering he had placed to shelter them, and experiencing a pleasure little to be understood by those who have never personally engaged in gardening, when he finds the fruit uninjured.

The present is a busy season, both with the farmer and the gardener; for while the former is sowing oats and barley, beans and peas, the latter is engaged in grafting and pruning his trees, digging and manuring beds, and sowing a great variety of seeds, both in the flower and kitchen garden. Grafting is a very interesting operation, and is the means by which we keep up the succession of fine fruit. The scion of a valuable fruit tree, when inserted upon a wild stock, does not, as one might at first suppose, lose its own nature as it becomes incorporated with the stock that supports it. On the contrary, it retains and imparts that nature, so that while the strength of the stock flows to the graft, the fruit produced is that of the scion. The clay generally used in grafting prevents the drying winds of this month from withering up the young scion, and depriving it of the moisture necessary for its existence. So great is the change produced in fruit by art, and by cultivation in a good soil, that it is difficult to recognise, in the innumerable variety now obtained, the original wild product of our hedges and lanes. The small, dry, sour, and unpalateable crab apple, which it is not uncommon to find in copses and hedges, and the fruit of the wild pear tree, which may be found in similar situations, seem to bear little affinity to the juicy and well-flavoured apples and pears of our gardens.

Spring is the season for diligent cultivation. In the garden and in the field not an hour is to be lost. Every fine day should witness the cheerful industry of those who are concerned in preparing the soil and sowing the seed. Indolence and neglect of the duties belonging to this season of the year can never be repaired. Like an undisciplined child, whose conduct betrays from day to day the unpardonable neglect of those who have the care of him, the soil, in its barrenness of good fruit, or its redolence of weeds, is a constant reproach to those who have neglected its diligent cultivation. On the other hand, how cheering is the prospect which generally rewards the well-directed labours of the husbandman,—how

delightful the sight of the springing crops, in their fair order and beautiful succession; and though many a promising appearance may deceive us,—many a field of corn, healthy in the blade, may disappoint in the harvest,—many a tree, richly laden with blossoms, prove destitute of fruit,—yet, generally speaking, how sure is the reward of persevering industry, and how plainly do the flourishing products of the soil betoken the character and the skill of the cultivator. Many indeed are the pleasures of opening Spring:—

To study culture, and with artful toil,
To meliorate and tame the stubborn soil;
To give dissimilar, yet fruitful lands,
The grain, or herb, or plant, that each demands;
To cherish virtue in an humble state,
And share the joys your bounty may create;
To mark the matchless workings of the Power
That shuts within its seed the future flower,
Bids these in elegance of form excel,
In colour these, and those delight the smell,
Sends Nature forth, the daughter of the skies,
To dance on earth, and charm all human eyes;
To teach the canvass innocent deceit,
Or lay the landscape on the snowy sheet—
These, these are arts pursued without a crime,
That leave no stain upon the wing of Time.

COWPER.

ON OMENS. I.

It forms a curious subject for reflection when we hear the numerous OMENS or forebodings of uneducated persons: they gradually yield to sounder trains of thought; but past ages show us how powerful was the influence which they exerted.

An *omen* was considered to be a sign or token of future events drawn from the language of a person speaking, or from some other casual circumstance. Sometimes the event in question was deemed to be the forerunner of some definite calamity or good fortune; but generally the forewarning was taken in an indefinite sense, and merely related to *something* "lucky" or "unlucky."

We find such omens extremely numerous among the ancients. It has been supposed that there was much of an *ominous* character in the following exhortation of Pythagoras:—

Adore the sound of a whispering wind: stir not the fire with a sword: turn aside from an edged tool: pass not over a balance: setting out on a journey, turn not back, for the furies may return with you: breed nothing that has crooked talons: receive not a swallow into your house: look not in a mirror by the light of a candle: at a sacrifice pare not your nails: eat not the heart or brain: taste not that which hath fallen from the table: break not bread: sleep not at noon: when it thunders touch the earth: pluck not a crown: roast not that which has been boiled: sail not on the ground: plant not a palm: breed a cock, but do not sacrifice it, for it is sacred to the sun and moon: plant mallows in thy garden, but eat them not: abstain from beans.

It is probable that some of the above were merely a figurative mode of expressing useful admonitions. But there were numerous omens, properly so called, believed in by the Greeks. Omens were plentiful at the sacrifices. It was deemed unlucky if the beast about to be sacrificed escaped the stroke—leaped up after being struck—did not fall flat on the ground—kicked and stamped after its fall—did not bleed freely—appeared to expire with pain or difficulty: or if the beast went unwillingly to the altar: or if its heart was found to be small, wrinkled, or in a state of palpitation: or if the sticks that were to form the fire did not kindle and inflame quickly. On the other hand, it was deemed a lucky omen if the animal nodded his head or wagged his tail, while going to sacrifice.

The appearance of *birds* in the eastern quarter of the heavens was looked upon by the Greeks as a propitious omen, because the sun, the great fountain of light and heat, and the principal source of fertility, makes his first appearance in that quarter; on the contrary, birds from the west were considered unlucky, because the sun leaves the world in that quarter. Among the other *ornithological* omens, were these:—If a *hawk* was seen seizing and devouring her prey, it portended death;—swallows, wherever and under whatever circumstances they were seen, were unlucky birds: before the defeats of Pyrrhus and Antony they appeared on the tent of the former, and on the ship of the latter, and by dispiriting the minds of their forces, probably prepared the way for their subsequent disasters;—in every part of Greece, except Athens, *owls* were regarded as unlucky birds;—if a *raven* came approaching towards the *left* hand, it was a very bad omen, but if it came croaking on the right hand it was a good omen. These birds were thought to understand their own predictions, because when they made a harsh noise and rattled in their throats as if they were choked, the worst omens were portended. The chattering of *magpies* was also an evil omen;—and when a *cock* sat silent and melancholy, it foreboded defeat. On the other hand, *lucky* omens were discovered in the following cases. If a flock of birds of different kinds came flying about any man, it was an excellent omen;—if an *eagle* were brisk and lively, and flew from the right hand to the left, it was one of the best omens which the gods could give;—if the prey escaped from a hawk, deliverance from danger was portended;—as *owls* were sacred to Minerva at Athens, they were there looked upon as omens of victory and success;—the *swan*, being an omen of fair weather, was deemed a lucky bird by mariners;—if a *raven* came croaking on the right hand, it was a tolerably good omen. A swarm of *bees* lighting on an altar, was a dreadful omen, and was said to have once happened before the defeat of Pompey. *Toads* were lucky reptiles. A *hare* presaged flight and disaster; and a *heron* was deemed an auspicious omen, and a token of success to those who were employed in any secret design.

Archbishop Potter says, that a number of omens were drawn from the influence of events on the person. The palpitations of the heart, the eye, or any of the muscles, and the ringing of the ear, were ominous: the omen was lucky if the palpitations were on the right side of the body, or the ringing in the right ear. A number of rules were laid down for the purpose of ascertaining whether *sneezing* were fortunate, or the contrary. When Themistocles was offering sacrifices it happened that three beautiful captives were brought to him, and at the same time the fire burned clear and bright, and a sneeze happened on the right hand; hereupon Euphrantides the soothsayer, embraced him, and predicted a victory to him. Xenophon was appointed general in consequence of a sneeze happening on the right hand while he was making a speech. If a person sneezed between midnight and the following noon it was fortunate; but from noon to midnight unfortunate. If a man sneezed at table while they were taking away the dishes, or if another happened to sneeze on his left hand, it was unlucky; if on the right hand, fortunate. If in undertaking any business, two or four sneezes happened, it was a lucky omen, and gave encouragement to proceed: if more than four, the omen was neither good nor bad; if one or three, it was unlucky, and dissuaded them from proceeding in what they had designed. If two men were deliberating about any business, and both of them chanced to sneeze together, it was a prosperous omen.

It was deemed a bad omen to meet an ape, a snake lying in the road, or a hare crossing the path. If, on the meeting of a public assembly, a weazel were observed to cross the path, no business was done. To spill salt at table was greatly dreaded by the Romans, and this superstition has not *now* wholly vanished away. If a husbandman, while he was going to sow his land, saw a woman at work with her spindle, or carrying it uncovered, he anticipated a bad harvest. The Greeks were careful not to make use of any of the words which signify *death*, as that was deemed unlucky; but they expressed their meaning in a circuitous or figurative way. They clothed their dead in white garments, whence it was reckoned an unlucky omen for a sick person to have white apparel; and if a person dreamed of a fire being extinguished, during the sickness of any in the same family, it was deemed to portend death.

Afflicted persons suffered their hair to grow, the cutting of the hair being deemed a token of joy. Mariners used to shave themselves when delivered from shipwreck: hence, if they dreamed of having the whole head shaved, that was deemed to portend a lucky voyage; but it was not one of the least ridiculous of these omens that, for a man to dream he had shaved *his own* head, was an unlucky omen.

The Greeks were particular not to marry except at certain seasons. The month of January, and the time of full moon, were the favourite periods. If a pair of turtle doves appeared during the celebration of the marriage, it presaged domestic harmony. If a crow and its mate appeared, it denoted long life to the new married couple; but if the crow appeared alone, it portended misery: hence, women used to be on the watch, to drive away a crow, if he should be seen to approach singly.

Comets were always thought to portend something dreadful. Eclipses of the sun and moon have so terrified whole armies, that they durst not engage their enemies; for, the true cause of them being unknown, they were held to be the work of the gods, who thus gave them notice of some signal calamity. Lightning, thunder, and other electrical influences and effects, according to the quarter whence they came, were good or evil omens.

To show the silly and utterly futile ground on which the omens of the Greeks and Romans rested, we will detail three or four instances in which sharp-witted men moulded them to their interests, even when they were established as *unlucky*. It was usual among the Greeks to deck tombs with flowers, herbs, and ribands: *parsley* was especially employed for this purpose; and was hence regarded as an ominous plant. As Timoleon was proceeding to reconnoitre the position and strength of the Carthaginian army, he was met by a number of mules loaded with parsley. This his soldiers deemed an unlucky omen; but Timoleon, with much ingenuity and presence of mind, converted it, in the opinion of his troops, into an omen of victory, by recalling to their recollection, that at the Isthmian games, the Corinthians crowned the victors with chaplets of parsley, accounting it a sacred wreath. In order to impress this interpretation of the omen more strongly on them, he first made himself a chaplet, and then his captain, and all the soldiers followed his example.

Another instance was afforded by Epaminondas. A riband that hung in his spear was carried by the wind towards a Lacedemonian sepulchre, which was deemed by his soldiers a bad omen; but he, with great presence of mind, converted it into a presage of the defeat of the enemy, by assuring his soldiers that, as the riband had been carried to the sepulchre of the Lacedemonians, it must portend death to *them*, and not to the Thebans.

The powerful mind of Cæsar generally kept him above these weaknesses. When he landed at Adrimetum, in Africa, with his army, he happened to fall on his face. This was regarded as a bad omen; but he found means to apply it to a very different purpose; for, taking hold of the ground with his right hand, and kissing it, as if he had fallen on purpose, he exclaimed, "I take possession of thee, O Africa!" Lucky and unlucky days stood on an equally unsound foundation. The day of the week on which the Romans suffered their memorable defeat from the Cimbrians, was long viewed as a most unfortunate day; and no general, if he could possibly avoid it, would begin a battle on that day. When Lucullus expressed his determination to attack Tigranes, King of Armenia, on the day in question, his officers unanimously and strongly opposed him; but he persisted in his design, gave battle, completely routed the enemy, obtained one of the most signal and important victories recorded in Roman history, and changed the character of the day from unfortunate to *fortunate*, as he foretold he would, when his officers endeavoured to dissuade him from fighting.

But so greatly had the superstitions of omens infected and debased the public mind among the ancient Greeks and Romans, that few public men were found hardy enough to carry on the national concerns of peace and war, in opposition to the general feeling, as decided by the exhibition of an omen. The omens derived from the feeding of chickens were much attended to in time of war; and contempt of their intimations was supposed to occasion signal misfortunes, as in the case of P. Claudius, in the First Punic War. When the person who had the charge of the chickens told him they would not eat, which was esteemed a bad omen, he ordered them to be tossed into the sea, saying, "Then let them drink." After this, engaging with the enemy, he was defeated with the loss of his fleet, and disgraced at his return to Rome.

The art of soothsaying, divining, or observing omens, by means of birds, arrived at such perfection, and gained such credit in the ancient world, that no honours were conferred, no magistrates created, and nothing of importance was undertaken, either in peace or war, without the approbation of birds; and if not confirmed by them, other divinations were often disregarded. Birds, because they continually flew about, were supposed to observe and know the most secret actions of men, and to be acquainted with all events. Hence the figurative expression of the royal preacher of Israel: "Curse not the king, no not in thy thought; and curse not the rich in thy bed-chamber: for a bird of the air shall carry the voice, and that which hath wings shall tell the matter." Eccles. x. 20.

The *observers of times*, those who pretended to foretel future events by present occurrences, are condemned by Moses in the Book of the Law; and the Israelites were forbidden to seek after them, because such were the aiders and abettors of idolatry, and would draw off the people of God from following after HIM, to whom alone belong "the times and the seasons, which the Father hath put in his own power." Acts i. 7.

In our next paper, we shall trace the existence of OMENS in more modern times.

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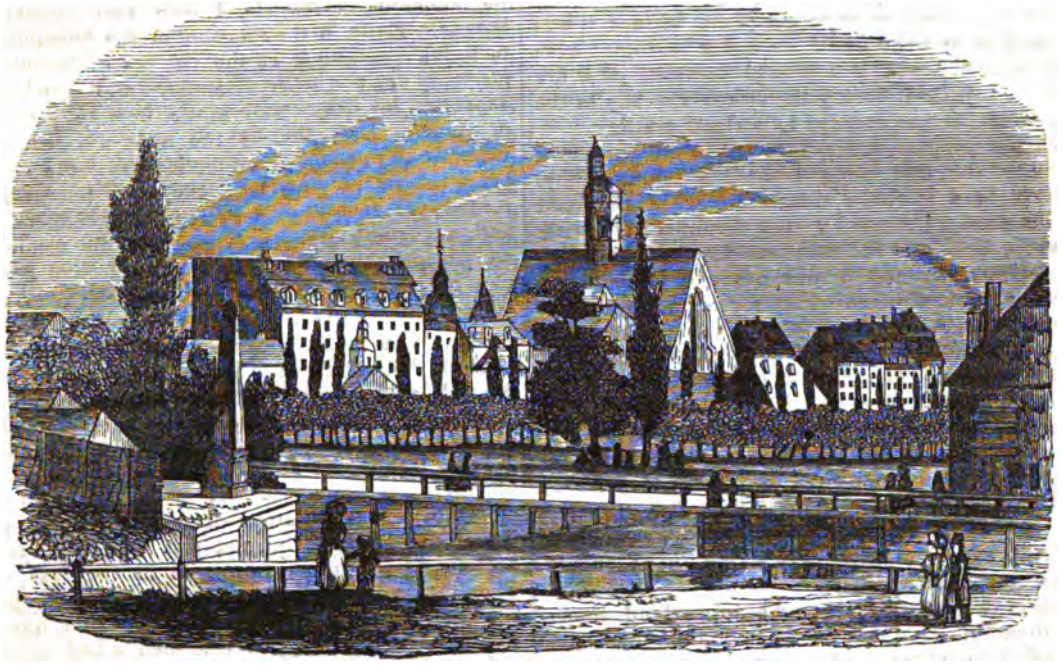
LEIPSIC.



THE flourishing town of Leipsic is important in a literary, commercial, and historical point of view, and under these three heads we propose to consider it at present. First, however, we will speak of its name and situation.

Leipsic was originally a Slavonian village, built at the junction of the rivers Parde and Pleisse, and surrounded by lime trees. From the latter circumstance it is said to have received its name; for those trees are called in the language of the Slavonians *Lip*, *Lipa*, or *Lipsk*. The town now occupies a site of one mile in length, and three quarters of a mile in breadth, on an extensive plain, well watered by the two rivers already mentioned, and by two others called the White Elster and the Luppe. This plain was formerly covered with swamps, but as the inhabitants of Leipsic increased in numbers, the soil was gradually drained, the marshes filled up, cultivation extended, and the fertility and healthfulness of the plain greatly promoted, so that flourishing villages now occupy the ground once covered with pools of stagnant water.

The literary celebrity of Leipsic arises in a great measure from the singular concentration of the book trade of Germany, in this one town. Not that all the productions of German authors are necessarily printed here; but it is the method of carrying on this department of trade in Germany, that wherever a book may have been printed, it must be sent to Leipsic to be sold. A book fair is held twice a year at Leipsic, at which booksellers from all parts of the country, as well as from Sweden, Denmark, the Netherlands, France, Russia, and England, are present. The most important fair, and that which attracts the greatest number of foreigners, is the Easter Fair, when as many as three hundred foreign booksellers are generally present. The Leipsic annual catalogue of books shows the immense number that are written in Germany. Every bookseller of any eminence throughout the Confederation, has an agent in Leipsic; and though it may appear a circuitous mode of executing business to employ four persons in the sale of a book instead of two, it is doubtless of great advantage to the trade thus to possess one grand emporium of literature, to which all, either personally, or by means of agents with whom they are in constant communication, may resort. The number of booksellers and musicsellers in Leipsic is 119, the number of sheets annually printed there about forty millions, and the weight of bales of books brought thither every year about 30,000 cwt.

From this statement, it may be supposed that German authors and publishers, meeting with a ready sale for their works, are better remunerated for their labour, than is the case with their brethren in other countries. But this is far from being the real state of things. In Russel's *Tour in Germany* we meet with the following account of piratical printers:—

There is a pest called *Nachdrückerei*, or Reprinting, which gnaws on the vitals of the poor author, and paralyzes the most enterprising publisher. Each state of the Confederation has its own law of copy-right, and an author is secured against piracy only in the state where he prints. But he writes for all, for they all speak the same language. If the book be worth anything, it is immediately reprinted in some neighbouring state, and, as the pirate pays nothing for the copy-right, he can obviously afford to undersell the

original publisher. Wirtemberg, though she can boast of possessing in Cotta one of the most honourable and enterprising publishers in Germany, is peculiarly notorious as a nest for these birds of prey. The worst of it is, that authors of reputation are precisely those to whom the system is most fatal.

Thus no publisher can afford to pay a high price for a manuscript, and the value of literary labour is almost annihilated. The coarse paper and bad type of many German books, may be thus accounted for. It is to the interest of the publisher to make his edition as cheap as possible, that the inducement to reprint may be less, and he will of course avoid as far as may be, the risk of losing by his speculation.

At Leipsic is published a weekly magazine which has an extensive sale throughout Germany. It is on the plan of the *Saturday Magazine*, many of whose illustrations have been cast in metal for the German work.

An university was founded at Leipsic in 1409 and confirmed by a bull of Pope Alexander the Sixth in the same year. During four centuries the university of Leipsic has had the fame of being one of the most eminent in Germany. Its students amount to between eleven and twelve hundred, and the professors, lecturers, and teachers, to one hundred and twenty. The library belonging to this institution was formed out of the libraries of suppressed monastries, and the gifts of professors, and now contains 100,000 volumes and 4000 manuscripts.

The celebrated schools of St Thomas and St. Nicholas, the Societies for the cultivation of Science, of Natural History and Mineralogy, of National Language and Antiquities, with Academies of Design, Painting, Architecture, &c., have added to the fame of Leipsic, and have given occasion for the display of talent in many eminent persons connected with these institutions.

Leipsic is greatly indebted to its large fairs for the wealth and prosperity it now enjoys. The commerce which draws foreigners of almost all nations to these assemblages, is not indeed so extensive as it formerly was, but it nevertheless gives employment in some way or other to the majority of the inhabitants.

In describing the effect produced on different travellers by the busy scene which is presented to their notice at Leipsic, Mr. Russel remarks:—

The German, the Russian, the Pole, the Austrian, the Italian, the Swiss, and in a hundred instances the Frenchman, has seen nothing like such a scene of commercial activity, and possibly will see nothing like it again:—such regiments of bales, such mountains of woolpacks, such firmaments of mirrors, such processions of porters, and carters, are to him a new world; and when the novelty has worn off, he forms his opinion of the place, at last, according as he has been seeking money or amusement. But to a Briton, fresh from his own country, the chandler's shop of Europe, and the weaving factory of the universe, a town like Leipsic has not even the charm of novelty in what renders it striking and interesting to other people.

The principal trade at the Leipsic fairs is in horses, peltry (that is, the skins of different wild animals before the inner side has undergone the process of tawing or tanning), cotton stuffs, and cotton, wool, colonial produce, English and French goods, books, and works of art. Between eight and nine thousand purchasers generally assemble at the great fairs.

In an historical point of view Leipsic is a place of much interest; its plains are dull and monotonous, but they awaken recollections of important battles, which have more than once decided the fate of Germany. Of these we shall only have space to mention one, and that the most recent battle and of the most general interest.

The conflict which took place on the plains of Leipsic in the month of October, 1813, between the allied powers, and the army of Napoleon, was most remarkable for the magnitude of the respective armies, and the important consequences resulting from it to the rest of Europe. A part of the allied forces amounting to 120,000 men advanced in three columns against Leipsic, where Napoleon had assembled his army. His whole force amounted to 80,000, or 90,000 men, the corps of Ney and Regnier not having yet joined the main body. Prince Schwartzenburg commanded the allied forces, though the monarchs of Austria, Russia, and Prussia were present. Early in the morning of the 16th October, he began the attack at the villages of Markleburg, Wachau, and Liebertwolkwitz, and carried the enemy's outposts. The battle became general at about nine o'clock, and the most astonishing intrepidity was displayed on both sides: the cannonading is said to have been the most powerful and uninterrupted ever heard by the oldest soldiers. The left wing of the allies suffered from the firmness of the brave Poles, who kept up an effective fire, and resisted all attempts to cross the Pleisse. Wachau was, however, the scene of the most determined conflict, and here Napoleon repeatedly attacked the centre of the allies. The arrival of Ney's corps from Delitsch, which occurred at this time, would probably have decided the fate of the day, but the allies also received succour by the appearance of General Blücher, and Ney's army being then dispatched against that of Blücher, the opportunity of turning the scale against the allies, by the union of his forces with those of Napoleon was lost. Towards evening the armies were pretty nearly in the same relative position as before the battle, and though Napoleon claimed the advantage, and caused the bells of Leipsic to be rung in honour of his victory, it was evident that the allies had suffered little more than the French.

The arrival of the northern army, which Napoleon had not in the least expected, but of which he gained information before the allies had received the news, made him anxious to retreat. On the 17th of October therefore he attempted to negociate with the allies, by means of a captive Austrian Count. He is said to have proposed an armistice, and to have asked permission to cross the Saal without opposition, on his cession of the fortresses of the Oder and the Vistula. But these measures, which sufficiently manifested his insecurity, were not listened to; especially as intelligence had now reached the allied powers of the arrival of the northern army, before which Marshal Ney and the Duke of Ragusa retreated over the Barde to Schönfeld.

Napoleon was now reduced (October 18th) to sustain a defensive battle, and took up a position between the Pleisse and Barde, and taking his station in the middle of his guard, he sent aid to every weak point, and superintended the whole. Thus he was enabled to fill the chasms made by the heavy firing of the allies, and to repair the disadvantages of his situation by his own activity and watchfulness. But the retreat was exceedingly difficult: no preparations had been made for such an event, no bridges prepared for crossing the rivers, and Leipsic itself had been but slightly fortified a short time before. Poniatowski and Macdonald were appointed to cover the retreat, but no sooner had the allies discovered that the position of the French was abandoned than they assailed Leipsic on all sides, and after a desperate conflict, succeeded in gaining possession of two of the gates. The confusion and disorder which now pre-

vailed is beyond description. There was but one bridge over the Elster, and that having been blown up too soon, the flight was changed into wild desperation. Napoleon himself had reached that bridge not without difficulty, and the bands of Macdonald and Poniatowsky being too late, were obliged to construct a foot bridge in the gardens of Reichenbach; but it was not strong enough for the mass that crowded on it, and the greater part perished in the waters. Mr. Russel thus mentions the event:—

The Elster, which runs through part of the suburbs, and occasioned the final destruction of the French army, is in reality but a ditch, and neither a deep nor a broad one. Where it washes the garden of Mr. Reichenbach's summer pavilion, it received Poniatowski who, already wounded, took his way through the garden, when all was lost, and sunk, with his wounded horse, in this apparently innocuous rivulet. A plain stone marks the spot where the body was found; and in the garden itself, an unadorned cenotaph has been erected by private affection, to the memory of the Polish chief.

The French are said to have lost in this important engagement, in prisoners, killed and wounded, sixty thousand men, while the loss of the victors has been estimated at forty-five thousand. Many parts of the city of Leipsic still bear traces of the conflict, and the inhabitants carefully preserve the memorials of the *Volkerschlacht*, or "Battle of the People."

RECOLLECTIONS OF PERSIA.

(From Baron Korff's *Reminiscences*.)

TEHERAN.

Streets of Teheran—Filth, but no thieves—Beggary—No occupation for Operatives—Oppression of the People of Persia—Bazaars—Story-telling — The Animal Kingdom — Site — The Persian Wagoners—The Palaces—Throne of the Peacock—First crowning of the present Shah.

The present residence of the Padisha, or Persian sovereign, is divided into several quarters, each designated by its particular name; such as "Shimrun," the Armenian quarter, "Shah Abdul Azinis," &c. Besides these, there is a separate precinct, called "The Ark" or citadel, which contains the Shah's palace, several Mosques, the Barracks in which the Sarbases or guards are quartered, and the residences of the principal persons employed about the court. The Ark is somewhat cleanlier than the rest of Teheran, is surrounded by a wall on which a few cannon are mounted, and has a guard posted at its gates, which are shut at night, when none are admitted unless provided with a pass from the police. The streets are not lighted at night, so that no person of any sort of respectability sets his foot beyond his threshold, except with lanthorn in hand; without such a companion, it is impossible for him to delve his way across the holes and pits, which desecrate the highways of Teheran, without doing homage to its filth and neglect. You need be under no apprehension from thieves, for robbing by night is so rare, that I never heard of such an occurrence during the whole of my stay here. Well may we—civilized Europeans as we call ourselves—take shame from the comparison, and mend our manners. You may walk through crowds in any part of Persia, every pocket full of valuables, and, on reaching home, find that no pains have been taken to ease you of the minutest fraction of your load.

The streets swarm in the day time with beggars from every region in Asia, their attire as diversified as their extraction. I know not of any capital which is so deluged with the representatives of idleness and indigence, or where both present themselves in so foul and disgusting a shape. As much of all this proceeds from the absence of any feeling or care for the aged and indigent on the part of the ruling powers, as from the want of employment which exists for the great mass of the people. How indeed can employment be found for them in a country where the pursuits even of agriculture are insufficient to give bread to the rural population? In Europe we have all sorts of occupation for the lower classes; such as building public edifices and private houses, making and mending roads, excavating or cleansing canals, constructing railways, working in manufactories of every description, &c.; all these means of subsistence are, however, comparatively unknown in Persia. And to this evil, you may add sterility of soil, want of navigable streams, difficulty of intercourse, and the beauty of the climate, which is little adapted to induce exertion. This state of things is aggravated by the form of government under which Persia is languishing; here every source of prosperity is monopolized by those who stand highest in the scale, whether in rank or fortune, —a state of things which leaves the property of the weaker at the mercy of the stronger, renders every provincial governor sole and arbitrary disposer of private property, and calls none to account for their official doings. Each province is in fact farmed out to the governor, and when the period comes for making his rent good, he levies and extorts the means with tyrant recklessness, caring neither for life nor property, and making choice of the unprotected as his special victims.

Now we will return to the capital. Here you will see khans without number, who have been ruined by the infamous proceedings of these provincial governors and their satellites, crowding round the gates of the Shah's palace in the hope of finding protection and redress, but doomed by the remorseless hive of courtiers who surround the throne and bar all access to it, to end their days in penury and wretchedness. How can it be otherwise? The governor is a prince burthened in general with a numerous family, and accustomed from earliest years to the luxuries of a court: with an expenditure far beyond his own means, through what channel can he supply the deficiency, but through his underlings in office? These tools must therefore plunder the khans; the khan pounces upon the bey; and the bey upon his inferiors. Hence has beggary become the curse of Persia; there is neither difficulty nor doubt as to its origin.

The Bazaars of Teheran are constructed in the form of long, covered corridors, lighted from above. On either side of the interior, are ranges of shops, occupied by dealers and working people, each quietly plying his avocation; you will see one making horse-shoes, another giving swords an edge, a third cobbling slippers, a fourth cutting tobacco pipes out of long canes, a fifth baking bread, and a sixth cooking "pilau," a favourite eastern dish. The Bazaar is both a market and a factory; and the head manufacturer in the establishment is the purveyor of victuals. There is no European delicacy of feeling here; for when "the faithful" is an hungered, his craving does not suffer any abatement, even though a pilgrim may be seated on his right hand, undergoing the operation of shaving, or a cadaverous invalid, on his left, expectant of relief from the opening of a vein. The Bazaars are likewise a favourite place of resort for the idle and the inquisitive, as well as the master that wants a servant, and the servant who wants a master. The Persians are fond to excess of story-telling; and here the best are to be heard. Whilst in Teheran, I observed a man sitting in an open space before the gate of the Bazaar, with a goat crouching beside him; a host of long beards were crowding round him, and he made them pay for his tales of wonder. You can scarcely enter

into the spirit of the *Arabian Nights*, unless you have had the opportunity of listening to one of these tale-mongers; and they are as cunning as Sheherazade herself, for they spin out their narratives to such a length, that their audience must go without the conclusion, unless they return for it the day after. The goat is a principal personage in the plot; it being his doom, (why and wherefore, I know not,) to play the part of representative of his Satanic Majesty. It was not the goat alone who threw a shade of originality about the scene, for some few paces off, I perceived a pole stuck in the ground, with a man's head empaled on the top of it, and the trunk lying at its foot; they were the remains of a hapless Mussulman, who had been caught thieving, and executed on the spot three days before.

The streets of Teheran have never been cleaned since the place was built; there is no call for such a process on the part of the public, and any friend of the animal kingdom may here study it gratuitously. The public ways are infested with the remains of camels, apes, mules, horses, dogs, and cats; and here they lie, until some starving dog strips the bones off their flesh, and leaves them to the gradual corrosion of time. The climate of this country is favourable to such neglect as this, for in any other spot half the population would be carried off by it; here the air is so dry, that bodies, instead of undergoing the process of putrefaction, generally moulder away. The site of Teheran has not been happily chosen; encompassed by hills of various elevations on every side, it lies in a perfect ravine,—so much so, that you cannot walk three or four miles out of the town, without finding yourself on a level with the tops of the trees within it. Such a thing as a gentle, refreshing breeze, is never to be felt, but tempests of exceeding violence, and long duration, are frequent. The place is supplied with water from two little streams, which flow down from the surrounding heights; and with so scant a provision, no wonder that the good folks of Teheran, and its vicinity, should lay great store by it. Subterraneous pipes lead the water into almost every street, and branch pipes afterwards convey it into cisterns or basins for private use. In this way every one is supplied with water in rotation, once in five or seven days: there is a great deficiency of it in summer, when the reservoirs become foul and stinking; and the malignant evaporation, which rises from them, is one of the prominent causes of the sicknesses innumerable, which rage during the summer season.

There are, I was told, nineteen caravanserays in this city, where the travelling dealers and *tshalvadars*, or wagoners, take up their abode. The latter form a caste of men quite distinct from the rest of the population. Honesty forms the leading feature in their character. In their clothing, too, they differ from the commonalty, and their dialect is unintelligible to foreigners. Their mules are their domestic companions, and follow their orders without the appliance of the lash. I saw one of these poor creatures, when, either from sloth or fatigue, he refused to move, summon fresh energy to his work, after an affectionate remonstrance from his master.

The mosque of Feth Ali Shah, though one of the principal edifices in Teheran, has little to boast of, in spite of its little gilt cupola. Besides this, there are thirty-one other places of Mahometan worship, and two Armenian churches, of which as little can be said.

Unless born with the taste of a Persian, there is small chance that an European will be captivated either with the exterior or interior of their palaces. The Asiatic, especially the Persian, has no idea of a *tout-ensemble*; he has not an eye to find fault with the discrepancy between luxury in one quarter and filth in another. In proof, I will instance the saloon which contains the celebrated *Takritans*, or Throne of the Peacock, which Nadir Shah brought back from his Indian campaign. It is covered with plates of gold, and resplendent with diamonds, emeralds, and rubies, of almost inappreciable value; the ceilings are splendid, and the sides of the apartment are hung with handsome shawls. But look towards the door, and you will observe the posts to be scarcely at right angles; carry your eyes beyond it, and they come in contact with a staircase, not merely mean and crooked, but fast verging to decay. One of the apartments is furnished after a curious fashion; the floor is beset with china and glass, presented to the Shah by European courts; huddled together in admirable confusion, stand tea-pots, cups and saucers, decanters, washing-basons, cups, glasses, dishes, coffee-pots, milk-jugs, &c., with a narrow way between them for visitors, and a small open space, where the late Shah received his guests. There is an enormous fan, formed of linen, made fast to the ceiling of the Summer refectory, which two attendants swing backwards and forwards by means of a rope, for the purpose of cooling the atmosphere.

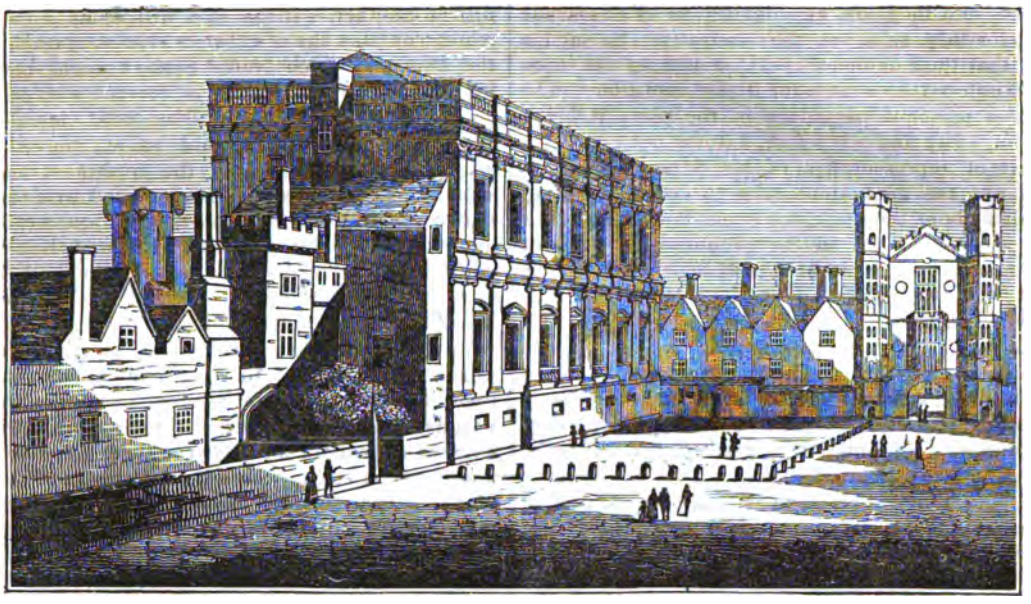
I was present when the reigning Shah entered Teheran, and took his seat for the first time on the throne. Having dismounted, he proceeded to the palace, Nigaristan, and after bedizening his breast and hands with diamonds and pearls, placed a little crown on his head. The English and Russian ambassadors, with their retinues, ranged themselves on either side of the throne; and behind it, Manutsheher Khan, the eunuch and minister of the home department, bearing the royal sword, and Khosru Khan, another eunuch, bearing the royal shield, took their stations. There was no one else in the apartment; but in the garden facing the windows we observed the princes of the blood royal, the kuimakam, vizier, the *Solomon* of the kingdom, a number of priests, and others.

When all had taken their proper berths, a Mullah stepped forward from the crowd, and ejaculated a short prayer on behalf of the youthful monarch; he was succeeded by the poet royal, who recited a lengthy ode in honour of Mohammed Shah, comparing his master to the sun and moon, the planets and stars, and all sorts of other things. It is in vain for me to look back and wish that I had taken down all the nonsense he launched on the occasion. His majesty, however, sore wearied with his journey, and ready to sink under the load of valuables that decked his royal person, could stand the infliction no longer; so he made short work with the *Selum*, (greeting), and the auditory walked off to their homes, amidst clouds of smoke from their *kalians* (hookahs). The savoury fume of the famed leaf of Shiraz wound its way through the water-bowl and its long silken pipes, and gave the noses of all the rich and great of Persia a "heavenly regale." The solemnity of Mohammed Shah's inauguration will "nestle, as a perennial rose, in the memorative flower-bed of those fortunate beings" whose heads may happen to remain on their shoulders.

O sacred *sorrow!* by whom souls are tried,
Sent not to punish mortals, but to guide;
If thou art mine, (and who shall proudly dare
To tell his Maker, he has had his share?)
Still let me feel for what thy pangs are sent,
And be my guide and not my punishment!

CRABBE.

HISTORICAL NOTICE OF WHITEHALL PALACE.



WHITEHALL PALACE, IN THE TIME OF CHARLES THE FIRST.

THERE are but few of our London readers who, on crossing from the Horse Guards to Whitehall Chapel, are aware that the elegant building before them once formed part of a royal palace of vast extent,—a palace which was the principal residence of the English monarchs after the occupation of Westminster Palace (of which Westminster Hall formed a part), and *before* the erection of St. James's Palace. This palace, under the names of York House, York Place, York Palace, and Whitehall Palace, is repeatedly mentioned by our historians; and we propose to give a short sketch of its history.

In the reign of Henry the Third, Hubert de Burgh, Earl of Kent, had a mansion on the site of Whitehall, which he rented or leased from the monks of Westminster. At his death he left it to the church of the *Black Friars*, near "Oldbourne" (Holborn); the brotherhood of which afterwards sold it to Walter Gray, Archbishop of York. Although it thus became his own private property, he bequeathed it to the successive holders of the see of York; and it thus became the town residence of the Archbishops of York for nearly three hundred years, and was known as *York Place*.

The last archiepiscopal inhabitant of the mansion was Cardinal Wolsey. This extraordinary man was made Archbishop of York in 1522, and *York Place* became a scene of almost regal splendour. His establishment included nine or ten young lords, sixteen chaplains, and four counsellors. "He had also," says Cavendish,—

A great number daily attending on him, both of noblemen and worthy gentlemen, of great estimation and possessions, with no small number of the tallest yeomen he could get in all the realm. In his *Hall* he had daily three especial tables, furnished with three principal officers; that is to say, a Steward, which was always a Dean or a Priest; a Treasurer, a knight; and a Comptroller, an esquire; which bore always, within his house, their white staves. In his privy *Kitchen* he had a master cook, who went daily in damask, satin or velvet, with a chain of gold about his neck. In his *Chapel* he had a dean, who was always a great clerk and a divine; a sub-dean, a repeater of the quire, a gospeller, a pisteller, and twelve singing priests. Of scholars, he had first, a master of the children; twelve singing children, and sixteen singing men. But to speak of the furniture of his chapel passeth my capacity to declare the number of the costly ornaments and rich jewels that were occupied in the same continually; for I have seen there, in a procession, worn forty-four copes of one suit, very rich, besides the sumptuous crosses, candlesticks, and other necessary ornaments to the comely furniture of the same. He had two cross-bearers and two pillar-bearers; and in his chamber, his high-chamberlain, his vice-chamberlain, twelve gentlemen-ushers, daily waiters, &c. Then had he of gentlemen, cup-bearers, carvers, servers, and waiters, forty persons; of yeomen ushers he had six; of grooms in his chamber, eight, of yeomen of his chamber he had forty-six daily to attend upon his person; he had also a priest there, which was his almoner, to attend upon his table at dinner.

Henry the Eighth was frequently entertained at York House; and important councils were held there, particularly one of bishops, scholars and casuists, to consult about the question of Henry's divorce from Queen Catharine. But the time was come when Wolsey was doomed to fall, and *York Place* to become a royal residence. The historical circumstances connected with the disgrace of Wolsey we cannot detail here; suffice it to say, that Wolsey was compelled to give up his palace, and Henry removed there almost immediately;—from which time it remained a royal residence about a hundred and sixty years.

The king immediately proceeded to enlarge the palace by building additional erections quite across what is now the street of Whitehall, and connecting them with St. James's Park. There was a gate-house built across the street and designed by the eminent painter Hans Holbein, a long gallery, a tilt-yard, a tennis-court, a cock-pit, a bowling-green, and other places which were at that time deemed necessary appendages to a royal residence. On the 25th of January, 1533, Henry was married to Anne Boleyne at this palace.

We must pass over many important events which were transacted at this palace during the reigns of Henry the Eighth, Edward the Sixth, and Mary, and come down to the reign of Queen Elizabeth. In 1581, the king of France sent some commissioners to England, to treat of a mariage between Elizabeth and the Duke of Anjou. The Queen built a new *Banquetting House* at Whitehall Palace on the grand occasion; and as this banquetting house was the forerunner of the building which we now call Whitehall Chapel, we will give a description of it, in the quaint language of Holinshed:—

This yeere, (against the coming of certain commissioners out of France into England,) by hir Majesties appointment, on the sixth and twentieth daie of March in the morning (being Easter daie), a *Banketting House* was begun at Westminster, on the south-west side of hir Maiesties palace of Whitehall, made in manner and forme of a long square, three hundred thirtie and two foot in measure, about thirtie principals made of great masts, being fortie foot in length a peece, standing upright; betuene euery one of these masts, ten foot asunder and more. The walles of this house were closed with canuas, and painted all the outsides of the same most artificiallie, with a worke called rustike, much like stone. This house had two hundred, ninetie and two lights of glasse. The sides within the same house were made with ten heights of degrees for people to stand vpon, and in the top of this house was wrought cunninglie vpon canuas, works of iuie and hollie, with pendants made of wickar rods, garnished with baie, iuie, and all manner of strange flowers garnished with spangles of gold, as also beautified with hanging toseaus made of hollie and iuie, with all manner of strange fruits, as pomegranats, oranges, pompions, cucumbers, grapes, carrets, with such other like, spangled with gold and most richly hanged. Betwixt these workes of baies and iuie were great spaces of canuas, which was most cunninglie painted, the clouds with starres, the sunne and sunne-beams, with divers other cotes of sundrie serts belonging to the Queen's Maiestie, most richly garnished with gold. There were of all manner of persons working on this house, to the number of three hundred seuentie and flue; two men had mischances, the one broke his leg, and so did the other. This house was made in three weeks and three days, and was ended the eighteenth day of April; and cost one thousand seuen hundred fortie and foure pounds, nineteene shillings, and od monie, as I was crediblie informed by the worshipful maister, Thomas Graue, surueior vnto hir Maiesties works, who serued and gaue order for the same, as appeareth by record.

In this *Banquetting House* the commissioners were sumptuously entertained; and on the following day, tournaments, masques, and pageants of various descriptions were given in the tilt-yard belonging to the palace (which occupied the portion of ground between what are now the Horse-Guards and the Treasury).

Feastings, masqueings, &c., were repeatedly held in Whitehall during the reign of Elizabeth; but these we must pass over, and proceed to the reign of the next sovereign, James the First.

During James's reign, Whitehall was the scene of even greater pomp and display than in the preceding reign. On Twelfth-Day, 1605, the young Prince Charles (afterwards Charles the First), was created Duke of York, with great pomp and splendour. In the evening the Queen's masque called "Blacknesse" was performed in the Banquetting House;—the Queen, and eleven of the most beautiful ladies of her court, were the chief masquers and dancers, under the names of the daughters of Niger.

A similar entertainment was given at Whitehall on the occasion of another royal Prince, Henry, being created Prince of Wales; the day after the ceremony was graced "with a most glorious *Maske*, till within half an hour of the sun's rising; and on the third day was a grand tilting-match, a gallant-sea fight, and many rare and excellent fire-works, which were seen by more than half a million of people."

On the occasion of the marriage of the Princess Elizabeth to the Elector Palatine, which took place at Whitehall, a masque was performed by the Peers, another by the members of the Temple, and others again by the benchers of Lincoln's Inn and Gray's Inn.

In 1606 James pulled down the slight Banquetting House erected by Elizabeth, and built another in a more substantial manner, and of a much larger size. But this was fated to be soon destroyed: in 1619 a fire took place, which Stowe thus describes:—

About ten a clocke, in the morning, vpon Tuesday the 12 of January, the faire Banquetting House at Whitehall was vpon the sodaine all flaming a fire, from end to end, and side to side, before it was discerned or descryde by any persons or passengers, either by scent or smoke; at sight whereof the court being sore amazed, sent speedy newes to the great lords of the Councell, who were then but newly set in the Guildhall in London, about excessive and disorderly buildings; but they all arose and returned to Whitehall, and gave directions to the multitude of people to suppresse the flame, and by hooke to pull downe some other adjoining buildings, to prevent the furious fire, and so by their care and the people's labour, the flame was quite extinct by twelve a clocke: besides the Banquetting House, there were diuers lodgings burned and the writings in the office of the Privy Signet, which was vnder the Banquetting House.

The consequence of this fire was, that the king contemplated the rebuilding of the whole palace; and Inigo Jones, the eminent architect, designed plans for a palace so extensive that the royal purse could not bear the expence; and the only part actually rebuilt was the Banquetting House, which still exists as one of the most beautiful specimens of architectural symmetry in the metropolis. It is a building of three stories externally. The lowest is rusticated, with seven small square blank windows, and, by its solidity, forms a substantial base for the beautiful superstructure. The principal story is adorned in the centre by four Ionic columns, and on each flank by two pilasters, with proper entablature and base; and the angles are ornamented with ante; between the columns and the pilasters is a row of windows, with semicircular and angular pediments resting on consoles. The entablature serves as pedestals to the Corinthian columns and pilasters of the third story; column being placed over column, and pilaster over pilaster. From the capitals were carried sculptured festoons, meeting in the centre with masks and other ornaments: the the windows of this story have square cornices, resting on consoles. This story is also crowned with its proper entablature, on which is raised the balustrade with attic pedestals between, which crowns the work.

This elegant Banquetting House, and the older parts of the palace, continued to be the scene of masques and banquets during the remainder of James's reign, and also in that of his successor, Charles the First. It was the scene of the decapitation of the last-mentioned unfortunate monarch, an event which is familiar to most of our readers. During the Commonwealth, the palace was the residence of Oliver Cromwell, but, from the apparent sternness of his character, was not the scene of much gaiety.

Our engraving represents a portion of the palace as it existed in those days. The elegant building in the centre is the Banquetting House still standing; and the building on the right is the Gate-House built across the street by Hans Holbein.

Under the next sovereign, Charles the Second, such scenes of licentiousness and debauchery disgraced Whitehall Palace, that we gladly pass them over, and come down to the latter end of the seventeenth century. In 1691 a considerable portion of the palace was destroyed by fire; and on the 4th of January, 1698, the entire edifice, with the exception of the Banquetting House, still remaining, was consumed. From this time, St. James's Palace became the royal residence; and the Banquetting House remained useless for some years.

At length, in the reign of George the First, it was converted into a chapel chiefly for the use of the military, with pews for the officers, seats for the privates, &c., of the foot-guards. The king gave a stipend of thirty pounds yearly to twelve clergymen, six from

each university, to officiate a month each, in succession. The number is now increased to twelve preachers from Oxford, and the like number from Cambridge, each of whom serves for the half of a month. They are selected from the resident fellows of colleges, and are appointed by the Bishop of London, as Dean of her Majesty's Chapel.

Since the erection of a military chapel, in St. James's Park, for the exclusive use of the troops, Whitehall Chapel has no longer been attended by the military. Its interior arrangement has been entirely altered, and the sittings are appropriated to certain public officers and other inhabitants of the crown estate of Whitehall and Privy Gardens.

The ceiling of the Banquetting House was ordered by Charles the First to be painted; he engaged Rubens, who (assisted by Jordaens,) received 3000*l.* for his work. It represents the apotheosis of James the First. It is in nine compartments, the middle one of which, represents James on his earthly throne, turning with horror from Mars, and other discordant deities; and turning towards Peace, with her attendants, Commerce and the Fine Arts. This ceiling was repaired by Kent, in the reign of George the Second; and again by Cipriani in 1778, for which he received 2000 guineas.

The walls were, originally, decorated with very rich hangings, representing part of the history of the Acts of the Apostles, from the cartoons of Raphael. After the execution of Charles the First, these hangings were purchased by the Spanish Ambassador, and sent by him to the Marquis del Carpio, in Spain. A few years ago they were purchased by an English gentleman from the Duke of Alva, and were exhibited at the Egyptian Hall, Piccadilly, in 1825.

The Banquetting House cost about 17000*l.*; and Inigo Jones, the architect, received but 8*s.* 4*d.* per day, with 46*l.* per annum for house-rent. The master-mason, Nicholas Stone, received four shillings and tenpence per day. Such were the wages of architectural labour in those days; though it is true that the value of money was greater then than it is now.

It is reported of Galileo, the most profound philosopher of his age, that, when interrogated by the Inquisition as to his belief in a Supreme Being, he pointed to a straw on the floor of his dungeon, and replied, that even if he had no other proof of an Intelligent Creator, the mechanism of that fragment of a plant would be sufficient; and not without reason, for even in the form of a stalk of corn, there are indications of contrivance, the force of which no candid mind can resist.

When the inordinate hopes of youth, which provoke their own disappointment, have been sobered down by longer experience and more extended views;—when the keen contentions and eager rivalries which employed our riper years have expired or been abandoned;—when we have seen, year after year, the objects of our fiercest hostility and of our fondest affections lie down together in the hallowed peace of the grave;—when ordinary pleasures and amusements begin to be insipid, and the gay derision which seasoned them to appear flat and importunate;—when we reflect how often we have mourned and been comforted, what opposite opinions we have successively maintained and abandoned, to what inconsistent habits we have gradually been formed, and how frequently the objects of our pride have proved the sources of our shame, we are naturally led to recur to the days of our childhood, and to retrace the whole of our career, and that of our contemporaries, with feelings of far greater humility and indulgence than those by which it had been accompanied; to think all vain but affection and honour, the simplest and cheapest pleasures the truest and most precious, and generosity of sentiment the only mental superiority which ought either to be wished for or admitted.
—Jeffrey.

ON GARDEN HERBS. II.

Rosemary.

Sweet-scented flower! who art wont to bloom
On January's front severe,
And o'er the wintry desert drear,
To waft thy waste perfume!
Come, thou shalt form my nosegay now,
And I will bind thee round my brow;
And as I twine thy mournful wreath,
I'll weave a melancholy song,
And sweet the strain shall be and long,
The melody of Death.

Come, funeral flower! who lov'st to dwell
With the pale corse in lonely tomb,
And throw across the desert gloom,
A sweet decaying smell;
Come press my lips, and lie with me,
Beneath the lowly alder tree;
And we will sleep a pleasant sleep,
And not a care shall dare intrude,
To break the marble solitude,
So peaceful and so deep.

And hark! the wind-god as he flies,
Moans hollow in the forest trees,
And sailing on the gusty breeze,
Mysterious music dies.
Sweet flower! that requiem wild is mine;
It warns me to the lonely shrine,
The cold turf altar of the dead:
My grave shall be in yon lone spot,
Where, as I lie by all forgot,
A dying fragrance thou wilt o'er my ashes shed.

Kirke White.

The above melancholy lines, while they show the pensive disposition of their youthful and talented writer, and the forebodings which sometimes crossed his mind concerning his early doom, are not inapplicable to our subject, since they allude to one of the uses of the herb Rosemary, which at the present time is partially employed, as it was in former days almost universally, to deck the coffins of the dead. Shakspeare names the herb, in his *Romeo and Juliet*, Act vi., Scene 5.

> Dry up your tears, and stick your rosemary
> On this fair corse; and, as the custom is,
> In all her best array bear her to church.

A branch of Rosemary is frequently placed in the hand of the dead person, and this custom, which still prevails in many parts of England and France, is supposed to have originated in the emblematical character of the plant, which was considered by our forefathers to denote fidelity in love, and was on that account woven into coronets to be worn at weddings. The faithfulness of the deceased was thus pourtrayed at his funeral, by the same emblem employed on his bridal day, and while the powerful odour of the plant pervaded every part of the chamber of death, the widow, and those who were assembled on the occasion, must have been the more deeply reminded of the love which had pervaded the life, and guided the conduct of their departed friend. While the meaning of the custom has been forgotten, or exists only in the remembrance of a few persons, the custom itself still prevails, and many of our cottagers in remote country villages, would deem it a great misfortune to be deprived of the means of performing this last act of kindness to the deceased. Other herbs are profusely employed, and sometimes a few flowers are scattered over the body; but we believe the rosemary to be seldom absent on such occasions. The tendency of this plant, when burnt, to purify the air of close apartments, is very well known in France, and we learn that its use in hospitals and sick rooms is very general. It is likewise planted on graves in some of the cemeteries of that country, and a French writer has given a marvellous account of the plant; as not only growing luxuriantly in such situations, but taking root within the coffin, (where branches had been placed in the hands of the deceased,) and flour-

ishing so abundantly in its darksome abode, that when, after the lapse of several years, the coffins were opened, the rosemary was found to cover the whole corpse!

Rosemary (*Rosmarinus officinalis*) is a genus of the class *Diandria*, order *Monogynia*. Its leaves are dark green, smooth on the upper side, and of a silvery hue on the under, and are highly aromatic. The blossoms are small, variegated blue and white, and less odorous than the other parts of the plant. Rosemary has a warm, bitterish, pungent taste. The plant is propagated by slips which are taken off in the spring and planted in a cool place. It is said to have been introduced into this country about the year 1548, and yet Gerard speaks of one variety as indigenous to our soil. "Wilde rosemarie," says he, "groweth in Lancashire, in diuers places, especially in a fielde called Little Reede, amongst hurtle berries neere vnto a small village called Maudsley." The herb grows in abundance, and without any cultivation, in the south of Europe. In some places it is occasionally used as fuel, and it then perfumes the air for miles in the vicinity.

The medicinal qualities of this herb are greatly lauded by the old writers. Culpepper speaks of it as being good for both inward and outward diseases. "The decoction thereof in wine," says he, "helpeth the cold distillations of rheums into the eyes, and all other diseases of the head and brain, as the giddiness and swimmings therein, drowsiness or dulness of the mind and senses, like a stupidness. It helpeth a weak memory, and quickeneth the senses. It is very comfortable to the stomach, in all the cold griefs thereof, helping both retention of meat and digestion, the decoction or powder being taken in wine. It helpeth dim eyes, and procureth a clear sight, the flowers thereof being taken all the while it is flowering, every morning, fasting with bread and salt. The flowers, and conserve made of them, are singular good to comfort the heart, and to expel the contagion of the pestilence. To burn the herb in houses and chambers correcteth the air therein. The dried leaves shred small and taken in a pipe as tobacco is taken, helpeth those that have any cough, phthisic, or consumption, by warming and drying the thin distillations which cause those diseases. The leaves are very much used in bathings, made into ointments or oil, are singular good to help cold benumbed joints, sinews, or members. The chymical oil drawn from the leaves and flowers is a sovereign help for all the diseases aforesaid; to touch the temples and nostrils with two or three drops, for all the diseases of the head and brain spoken of before; so also to take one drop, two, or three, as the case requireth, for the inward griefs, yet it must be done with discretion, for it is very quick and piercing, and therefore very little must be taken at a time."

Such are the virtues ascribed to this herb by our old writers, and we are informed that similar powers were allowed to it by the Arabians and the Romans. Cancerous and other diseases are affirmed to have been dried up and perfectly cured by means of an infusion of rosemary in spirits of wine; indeed it is invested with attributes of healing that we cannot suppose to have ever been bestowed on any individual remedy. But while various and contradictory properties are sometimes ascribed to it, there are certain cases in which all agree that rosemary has been found useful. It appears to be a powerful stimulant, and to have been employed with good effect in affections of the head and nerves. Nevertheless it is nearly banished from modern practice. A weak infusion of fresh rosemary leaves furnishes a pleasant and wholesome substitute for tea, and is particularly agreeable to some dyspeptic stomachs and nervous habits. The essential oil of rosemary is often prescribed in liniments and ointments. It is likewise an essential ingredient in Hungary water, and enters into the composition of Eau de Cologne. This oil contains a portion of camphor, which, by being kept, becomes deposited in crystals. It acquires by age a strong smell of turpentine, and indeed this substance is often used to adulterate the oil of rosemary.

The strengthening of the memory, which was attributed to it by the ancients, was doubtless the cause of the emblematic meaning given to the plant, as already described. In the fourth act, and fifth scene of *Hamlet*, Ophelia offers it to Laertes, saying "There's rosemary, that's for *remembrance*;" and if it was thus allowed to awaken memory, it was no inapt emblem of faithful attachment. In allusion to the double use of this plant, Herrick says, that it

> Grows for two ends, it matters not at all,
> Be't for my bridal or my burial.

The present uses of rosemary are very limited. Its pungency and bitterness unfit it for culinary purposes, and though employed as a purifier of the air in the apartments of the sick, it is, with respect to its medicinal qualities, little known or appreciated.

O LUXURY!

Bane of elated life, of affluent states,
What dreary change, what ruin is not thine?
How doth thy bowl intoxicate the mind!
To the soft entrance of thy rosy cave
How dost thou lure the fortunate and great!
Dreadful attraction! while behind thee gapes
Th' unfathomable gulf where Asshur lies
O'erwhelmed, forgotten, and high-boasting Cham,
And Elam's haughty pomp, and beauteous Greece,
And the great queen of earth, imperial Rome!

DYER.

BEAUTY IN CREATION.

WE cannot look around us, without being struck by the surprising variety and multiplicity of the sources of Beauty of Creation, produced by form, or by colour, or by both united. It is scarcely too much to say, that every object in nature, animate and inanimate, is in some manner beautiful, so largely has the Creator provided for our pleasures through the sense of sight. It is rare to see anything which is in itself distasteful, or disagreeable to the eye, or repulsive: while on this, however, they alone are entitled to pronounce who have cultivated the faculty in question; since, like every other quality of mind as of body, it is left to ourselves to improve that, of which the basis has been given to us, as the means of cultivating it have been placed in our power. May I not also say, that this beauty has been conferred, in wisdom, as in beneficence? It is one of the revelations which the Creator has made of Himself to man. He was to be admired and loved: it was through the demonstrations of His character that we could alone see Him and judge of Him: and in thus inducing or compelling us to admire and love the visible works of His hand, He has taught us to love and adore Himself. This is the great lesson which the beauty of creation teaches, in addition to the pleasure which it affords; but, for this, we must cultivate that simple, and surely amiable piety, which learns to view the Father of the Universe in all the works of that universe. Such is the lesson taught by that certainly reasonable philosophy which desires to unite what men have too much laboured to dissever; a state of mind which is easily attainable, demands no effort of feeling beyond that of a simple and good heart, and needs not diverge into a weak and censurable enthusiasm. Much therefore is he to be pitied or condemned, who has not cultivated this faculty in this manner; who is not for ever looking round on creation, in feeling and in search of those beauties; that he may thus bend in gratitude and love, before the Author of all Beauty.

—MACCULLOCH.

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THE ISLANDS OF GUERNSEY AND SERK.

SAINT PETER'S PORT, GUERNSEY.

In a former volume of the *Saturday Magazine*, (Vol. IV. p. 234,) we gave a partial sketch of the Island of Guernsey, forming one of the group called collectively the "Channel Islands." We shall here present some additional information on the subject.

St. Peter's Port is the only town on the Island, and the approach to it from the sea is said to be very attractive. But "like many more important places than St. Peter's Port, these appearances are deceptive; and all the apparent attractions of the town disappear when one steps on shore. I should say, that the first impressions of St. Peter's Port, are decidedly unfavourable. We perambulate narrow, steep, and crooked streets, flanked by substantial, indeed, but old looking dusky houses; and walk as long as we may, we reach no open space where we may stop and look about us*." The capital of the neighbouring island of Jersey, St. Hellier, differs from St. Peter's Port in this,—that, in the former, the houses of the gentry are thrown into rows and streets, and form part of the town; whereas the better houses in St. Peter's Port are not within the town, but are detached residences; and herein arises the great beauty of the environs of the town, and the small attraction of the town itself.

The Elizabeth College, and the Public Hospital, were described in our former paper; we will therefore proceed to speak of the Fish-market, one of the most admirable to be found at Guernsey or elsewhere. A person entering the Guernsey fish-market on a Saturday morning, in a good fish season, would, as Mr. Inglis remarks, set down the people of Guernsey as a fish-eating people. It is a spacious arcade, a nundred and ninety feet in length, and broad and lofty in proportion, lined with a double row of marble slabs, which extend the whole length of the building, and are covered with fish. "And it is probable that if we visit the market on the afternoon of the same day, the immense display of the morning will have dwindled away into a few solitary whitings, and shell-fish, scattered here and there." The building is modern; the interior light and airy; and the slabs, chiefly of variegated marble, are each supplied with plenty of fresh water. The supply of fish is exceedingly abundant, particularly of turbot, cod, and mullet; and the prices are cheap.

The civil government of Guernsey, under the governor appointed by the Crown, is as follows. The legislative body is composed of a bailiff, appointed by the Crown,—the rectors of the parishes, eight in number, presented by the governor,—the constables, representatives of the parishes,—and the jurats, chosen by a body, called the states of election. When the legislative body is to meet, a writ is issued by the

* Inglis' *Channel Islands.*

bailiff for that purpose. The object of the meeting is explained to the constables, who in their turn call together and consult the states of election, consisting of 132 *douzeniers* chosen by the rate-payers. The douzeniers of each parish come to a decision on the subject, and the constable representing them votes according to the instructions he has received, in an assembly consisting of the bailiff, the jurats, the clergy, and the constables. The *jurats* are the judges of the island. In England, in order that the judges may be as free as possible from party or popular control, they are appointed for life by the Crown; but in Jersey and Guernsey they are elected by the people. In the former island a fierce and bitter party spirit arises from the election of the judges by what is nearly universal suffrage. In Guernsey the evil is less, since the election is made, not by the people at large, but by the "States of Election," consisting of about 150 persons.

The Guernsey clergy are universally poorly paid, since the great tithes of the island go to the governor, who is appointed by the Crown,—the small tithes being the principal source of income to the clergy.

Of the country-people generally, we may say that they belong to three different classes,—the substantial land-owner, the small proprietor, and the cottager. The first class live upon the least marketable part of their produce; feed their cattle on the parsneps and beet-root grown on their own grounds; make their spirits from their own potatoes, and cider from their own apples; with their other produce, they purchase lands or leases, and thus gradually increase their property. The second class pursues nearly the same course, but on a smaller scale. He has his one cow, and a few pigs, and by being generally economical, is enabled to lay by a little store. Many of them too are carpenters, or masons, and earn an addition to their income by going out to work, their families not requiring all their attention. Some, who live near the coast, join the trade of fisherman to that of farmer. Three or four of them will club together in the purchase and keep a boat; they go out to fish, return with a load, and the wives carry the fish to market, while the husbands proceed to cultivate their grounds. The third class, the cottagers, are generally day-labourers, or form part of the family of a small proprietor. Even this class of persons contrive to save money. A very favourable character for morality is given to the humbler classes of the inhabitants of Guernsey.

The dress of the inhabitants is very characteristic, except in those instances where the novelties of fashion have been introduced. The "Guernsey bonnet" has long been known for its singularity, as well as for its large size. The crown is formed of a long piece of silk, gathered into three rows of plaits, of an oval shape, from the front to the back of the head; and is set off between the folds with lace, or crape; with the latter when the wearer is in mourning. A very large and complex bow of narrow ribbon is plaited immediately in front. The top of the crown is either flat or plaited, to correspond with the rest of the bonnet; and on the top another bow is perched. The front, of pasteboard, is covered with silk, and reaches somewhat beyond the ears. Under this bonnet is worn a close mob cap, with a narrow muslin border. The other usual articles of female dress are, a petticoat, of black stuff, thickly quilted, a gown of an old fashioned chintz pattern, open in front, and tucked into the pocket holes of the petticoat; a bodice open in front to the waist; tight sleeves, terminating just below the elbow; blue worsted stockings; and black velvet shoes and buckles. The men's dresses are a curious mixture of old French and old English. But both sexes are beginning now to ape the fashions of their two great neighbours.

We will now quit Guernsey and pay a visit to the romantic little island of *Serk*, situated two or three leagues distant from it. Its appearance from a distance is that of a barren elevated spot, but once arrived on the island, we see that it is covered with luxuriant crops, diversified with woods, roads, and valleys; and spotted with the comfortable farm-houses of about six hundred inhabitants.

The nature of the possessions in the island of Serk, as well as the number of inhabitants, are liable to as little change, perhaps, as in any part of Europe,—chiefly arising from the laws relating to property. The particulars, according to Mr. Inglis, are these. There are forty copyhold possessions on the island; and there can never be either less, or more. No copyhold possessor of a farm, can sell or dispose of a part of his property; he may sell, but he must sell all; and one thirteenth part of the purchase money goes to the lord of Serk. In case of death, also, the property devolves entire upon the eldest son; or failing such, to the eldest collateral branch. All properties, in short, must ever continue entire, as originally granted. Buildings, too, erected on an estate, must go along with it; there is therefore no facility for an increasing population. The lord of the manor, however, possesses some land not yet granted in copyhold; and upon that land, houses have been erected, and population has increased. The properties of the farmers average about fifteen acres in extent; so that, as there is not sufficient employment for all the members of a family, most of the farmers are also fishermen. The inhabitants are, indeed, more warmly attached to the latter, than to the former, mode of life; and were it not that the soil is extremely fertile, the labour and attention bestowed upon it by the farmers would be insufficient to insure good crops. But the fertility is great, sixty bushels of wheat per English acre being often yielded.

The fish caught by these farmer-fishermen, are partly devoted to the daily meals, partly salted for winter provision, and the remainder carried to market; particularly lobsters and cray-fish. The Serkmen build their own boats, and go to Guernsey, to France, and even to England, with a cargo of potatoes from their farms, and of fish from their fishery. The preference which the men show for fishing leaves a number of laborious duties on shore to be performed by the women, and this, indeed, to so great an extent, that they have not time to bestow the requisite attention to their children. The result is, that the women and children are unfavourably placed, in comparison with the men. It is the opinion of Mr. Inglis, that if the Serkmen were to pay more earnest attention to the cultivation of their farms, the result would be, after a time, a larger return from their labour, than they now have from farming and fishing combined.

The government of this little island is very singular. In civil, military, and ecclesiastical affairs, it is under the jurisdiction of Guernsey; but the legislative power, as far as regards the internal arrangements of the island, is vested in the seigneur, or lord, and his forty tenants. These forty persons form a sort of little parliament, which sits three times a year, and which is presided over by an officer, called the Seneschal, who is appointed by the seigneur; and the seigneur possesses a veto on the acts of the assembly. The executive power is vested in the Seneschal, who has the cognizance of civil cases; and from his court, an appeal lies to the royal court of Guernsey. Besides these, there are a provost, a registrar, a constable, and a vingtenier: the office of the first, is to plead the King's causes, to regulate weights and measures, and to arrest for debt; the second has the custody of the

records of the island; the third and fourth constitute the police of the island. The provost and registrar are named by the seigneur: the others by the forty tenants. The seigneur could formerly call upon the inhabitants to bear arms, and provide themselves with muskets, and accoutrements: these latter, are now provided by government: the seigneur is the lieutenant-governor of the hundred persons forming the militia.

The houses of the farmers are built of stone, generally granite, and have, most of them, the appearance of great antiquity. Their situations are generally well-chosen, in some sheltered spot, either in the dells, or behind hillocks. All of the better sort of houses have enclosures before, and a little orchard ground behind; and there is altogether something very picturesque about these oddly shaped and very substantial houses, with the moss-grown rocks and stones in their neighbourhood, and the venerable ivy that hangs upon their walls. Within doors, multifarious occupations may be seen going on, such as tailoring, hat-making, and the like, for in such a limited community as that of Serk, families must provide themselves, by their own labour, with many articles which would be sold by shop-keepers, in other places.

The Serkmen are rather religiously disposed. There is a neat and commodious church, erected about twenty years ago, the incumbency of which is a perpetual curacy, in the nomination of the seigneur. There is no fixed stipend, the sum being agreed on between the patron and the minister: at present the stipend is eighty pounds per annum and a free house. There is, also, a free-school in the island, attended by about seventy children: the school-master receives thirty three pounds per annum. The revenue of the lord, or seigneur, consists principally of the tithes, viz. one tenth of all the wheat, barley, oats, beans, lambs, wool, &c.—as well as one half of all unclaimed wrecks.

The climate of Serk is exceedingly healthy; no medical man resides on the island, nor is one often wanted. "What a retreat would Serk be," says Mr. Inglis, "to the professional or the literary man, from the din of the metropolis! What a contrast between the crowd, and bustle, and noise, and mists of Fleet Street, and the repose, and free air of Serk, with its deep, still dells, and flowery knolls, and quite bays, and monotonous sounds."

ON OMENS. II.

In our last article on this subject, we confined our notice principally to the omens credited by the ancient Greeks and Romans. We proceed now to later ages.

Some of the oriental nations believe, that if a deer be seen descending a mountain, or behind the beholder, it is an unlucky omen. Marriages made about the middle of February are fortunate. If an involuntary cough or sneeze interrupt the Mahometans during their ablutions, the whole ceremony is begun anew. When a Persian peasant wishes the wind to rise for the purpose of winnowing his corn, he rubs and scatters into the air a species of saffron; and by these means hopes to obtain what he desires. In some places, in order to foretel the weather, the peasants tie some combustible matter to the tail of a bullock, and ignite it; if the animal then run up a hill, they consider it a sure prognostic of rain.

The early Germans made the *horse* an instrument of divination. When they were about to engage in any military enterprise, they set up three rows of spears, each row consisting of a certain number fixed in the ground, and one laid across the top. When they were thus fixed, a horse (a white one was preferred) was brought out by the priest, and led to the spears: if he advanced in such a manner that his right foot reached the spears first, the omen was fortunate; but if his left foot advanced before his right, the omen was unlucky. This ceremony was repeated before each of the rows of spears: it was also repeated before they embarked on any naval expedition.

In the British islands, particularly England, the belief in omens has diminished greatly before the spread of intelligence, sound thinking, and religious knowledge; and it is principally among uneducated persons, and those, too, in the decline of life, and in rural districts, that such superstitions still retain their ground. The melancholy and disgraceful proceedings formerly in vogue against *witches* have vanished away with the more general diffusion of education, and the clearing up of religious principle by the standard of the Bible.

Among the events which were formerly regarded as good omens, but which have gradually relaxed their hold upon the imaginations of even the humblest classes in England, though still occasionally met with, are the following:—If, on setting out on a journey, a sow with pigs were met, the journey would be successful. To meet two magpies portended marriage,—three, a successful journey,—four, unexpected good news,—five, that the person would soon be in the company of the great. If, in dressing, a person put his stockings on wrong side out, it was a sign of good luck; but the luck would be changed, if the stockings were the same day turned the right way. It was a sure forerunner of success to a person going on important business to throw an old shoe after him when he left the house. To find a horse-shoe was deemed lucky: and particularly so if it were preserved, and nailed upon the door, as it thus served to prevent witchcraft. If the sun shone on a married couple, or if it rained when a corpse was being buried, these were lucky omens. Valentine's day was particularly favourable as a season for marriage. In plucking a "merry-thought," the person who obtained the largest share would be married first.

Similarly unfavourable results were foretold from a large number of events, great and small. To kill a magpie was a terrible misfortune, as was likewise to kill a swallow. If, on a journey, a sow crossed the road, the traveller, if he could not pass it, had to ride round it, otherwise bad luck would attend his journey. If a lover presented a knife or anything sharp to his mistress, it portended that their loves would be cut asunder. In fact, to *give* away a knife upon any occasion was held to be unlucky; so that a person wishing to make a present of a knife to any friend, always received a half-penny, or other small coin, in return as payment, that the article might not seem to be given, but *sold*. To find a knife or a razor, foretold disappointment. A piece of coal or burning cinder, of a hollow, coffin-like form, starting from the fire, foreboded death. To spill salt, or lay two knives across each other at table, were ominous. If thirteen persons sat down in company at table it was called "the devil's dozen," and misfortune would happen to some one of the party. The noise of the small insect called a *death-watch*, and the sound of the screech-owl at midnight, portended death or some terrible misfortune. If the cheek felt hot, or the ear tingled, some person was talking of the individual in question. A "thief" in the candle foretold the coming of strangers; and a bright spot of the burning wick, the arrival of a letter. Friday was an unlucky day on which to be married; and this day is even *now* pre-

verbially shunned for this purpose. Yellow was an ominous colour for an unmarried female to wear. If it rained on St. Swithin's day it was sure to rain for forty days afterwards. If an old woman sneezed, it was very unlucky. It was also unlucky to *cut* an infant's nails before it was a twelvemonth old. The reader may, if he pleases, while perusing this list of amusing weaknesses, consider how many of them have yet to be driven from their dwelling-place, the "heads of the people," by rational cultivation of the mind.

The peasantry of the southern districts of Scotland appear to possess a strength of mind which keeps them tolerably free from these prejudices; but the highlanders, before they were brought much into communion with their southern brethren, had numerous omens. It was unlucky to stumble at the threshold, or to be obliged to return for anything forgotten. To step over a gun or a fishing-rod, spoiled sport. If, when the servant was making a bed, she happened to sneeze, the sleep of the person who was to lie in it would be disturbed, unless a little of the straw, (with which the highland beds used to filled,) were taken out and thrown into the fire. If a black cloud were seen on New Year's Eve, it portended some dreadful calamity, either to the country or to the person over whose estate or house it passed. The day of the week on which the third of May fell was deemed unlucky throughout the year. Friday was an unlucky day for digging peat, or for taking an account of the sheep or cattle on a farm. When turf was to be used for fences, it was cut during the increasing of the moon, because the wish was that it should increase or grow; but when turf was cut for fuel, it was done when the moon was on the wane, under the hope that it would wither and dry speedily. If a house took fire during the increase of the moon, it denoted prosperity; if during her wane, poverty. In the island of Mull, the first day of every quarter was deemed fortunate; and Tuesday was the most lucky day for sowing corn. It was deemed lucky to meet a horse. In the Orkneys, Friday, which in most other countries is reckoned an unfortunate day, is generally chosen for the wedding-day. When an Orkney fisherman is setting off from the shore, he takes especial care to turn his boat in the direction of the sun's motion; if he neglected this, he would not expect good luck. In some parts of Scotland good or bad fortune throughout the year is thought to depend greatly on the person who is first seen on New Year's morning, or the "first foot," as it is called: if the "first foot" be that of a friend, and a fortunate person, the subsequent year will be fortunate. Under this idea, as soon as twelve o'clock at night announces the commencement of the New Year, it is customary to secure a "lucky foot" to one's friend, even though it should be necessary to enter their chamber when they are fast asleep.

Brand, in his *Popular Antiquities*, has collected an immense mass of omens, of various times and regions, of which we have thus extracted a few. Waldron, in his description of the Isle of Man, says:—

No person will go out on any material affair without taking some *salt* in their pockets, much less remove from one house to another, marry, put out a child, or take one to nurse, without salt being mutually interchanged; nay, though a poor creature be almost famished in the street, he will not accept any food you will give him, unless you join salt to the rest of your benevolence.

Camden, speaking of the Irish, says:—

In the town, when any enter upon a public office, women in the streets, and girls from the windows, sprinkle them and their attendants with wheat and salt. And before the seed is put into the ground, the mistress of the family sends salt into the field.

A writer of the seventeenth century, speaking of the Jews, tells us that some of them observe, in dressing themselves in the morning, to put on the right stocking and right shoe before the left, without tying them; then to put on the left and tie them; and lastly to tie the right, so as to begin and end with the right leg. Hudibras tells us, too, what is somewhere reported as a fact, that:

> Augustus, having by oversight
> Put on his left shoe 'fore his right,
> Had like to have been slain that day,
> By soldiers mutin'yng for pay.

Mr. Brand very sensibly and judiciously observes:—

A superstitious regard to omens seems anciently to have made very considerable additions to the common lot of human infelicity. They are now pretty generally disregarded, and we look back with perfect security and indifference on those trivial and truly ridiculous accidents which alternately afforded matter of joy and sorrow to our ancestors. Omens appear to have been so numerous, that we must despair of ever being able to recover them all; and to evince that in all ages men have been self-tormentors, the bad omens fill a catalogue infinitely more extensive than that of the good.

Sailors, though usually the boldest men alive, are yet frequently the very abject slaves of superstitious fear. This is owing probably to the so much greater call upon their physical than upon their mental capacities, and the little opportunity which they usually have for acquiring knowledge. "Superstition and profaneness," as Andrews observes in his *Anecdotes*, "those extremes of human conduct, are too often found united in the sailor; and the man who dreads the stormy effects of drowning a cat, or of whistling a country-dance while he leans over the gunwale, will too often wantonly defy his Creator by the most daring execrations and the most licentious behaviour."

Among sailors, whistling is thought to be inauspicious, as tending to provoke Satan to show his power in stirring up tempestuous winds, though it is sometimes practised in a dead calm. Even at the present day they account it very unlucky to lose a bucket or a mop. To throw a cat overboard, or drown one at sea, is the same. Children are deemed lucky to a ship.

Sir Thomas Browne tells us of the following old custom:—

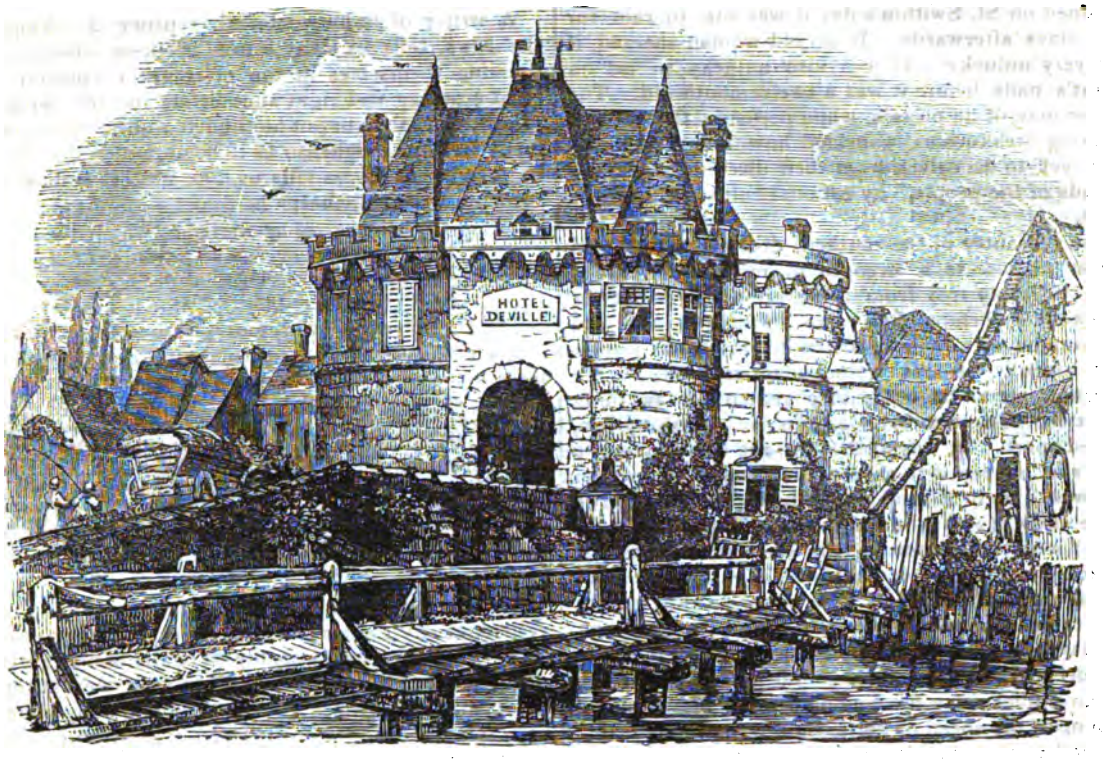
That a king-fisher, hanged by the bill, showeth us what quarter the wind is in, by an occult and secret propriety, converting the breast to that point of the horizon from whence the wind doth blow, is a received opinion and very strange—introducing natural weather-cocks, and extending magnetical positions as far as animal natures: a conceit supported chiefly by present practice, yet not made out by reason or experience.

"Omens and prognostications of things," says Bourne, "are still in the mouths of all, though only observed by the vulgar." They were formerly observed also by people far above the vulgar, as the following account will show.

Dr. Hickes, in a letter to Dr. Charlett, Master of University College, Oxford, dated Jan. 23, 1710–11, and preserved in the Bodleian Library, at Oxford, mentions:

The omens that happened at the coronation of King James the Second, which, (says he) I saw: viz., the tottering of the crown upon his head; the broken canopy over it; and the rent flag hanging upon the white tower when I came home from the coronation. It was torn by the wind at the same time the signal was given to the Tower that he was crowned. I put no great stress upon these omens, but I cannot despise them; most of them, I believe, come by chance, but some from superior intellectual agents, especially those which regard the fate of kings and nations.

VENDOME, IN FRANCE.



ENTRANCE INTO VENDOME.

Vendôme is situated in the central part of France, in the department of *Loir et Cher*. It was formerly the principal town in a small district called Vendômois. This district was bounded on the west by the Maine, on the north by the Dunois, on the east by the Blaisois, and on the south by the Touraine. It was about twelve leagues in length, and ten in breadth, and was watered by the Loir, the Graisne, and numerous smaller streams.

This mode of division is, however, no longer in continuance, and Vendôme must be considered as the capital of the department of Loir et Cher. Vendôme has given the title of duke to many distinguished men in France. The first was Cæsar, son of Henry the Fourth and Gabrielle d'Estrée. From him was descended Louis, Duke of Vendôme, a great general in the time of Louis the Fourteenth. He was born in 1654, entered at an early age into the military service, and received, in 1702, the command of the French army in the war of the Spanish succession. After having distinguished himself in Tyrol, Italy, and Belgium, the Duke of Burgundy was placed over him; and the disagreement of the two commanders caused the defeat of the French at Oudenarde in 1708. Through the influence of Madame de Maintenon, the most experienced generals were displaced if they chanced to displease her; and the Duke of Vendôme was now recalled. But when the affairs of Philip the Fifth of Spain began to wear a threatening aspect, the Spainards requested Louis the Fourteenth to send Vendôme to their aid; and his arrival changed the state of things. December 9, 1710, he defeated the Austrian general Stahremberg at Villariciosa; and having re-established Philip's throne, he died in 1712, and was buried in the escurial. His brother Philip was grand prior of the order of the Knights of Malta, in France; he was born in 1665, served in the Spanish war of succession, and died in 1724.

But although the title of *Duke* of Vendôme is comparatively recent, the town gave that of *Count* some centuries back; for it was one of the Counts of Vendôme that originated a remarkable custom followed in that town for several ages, a custom in which superstition has no small share. Louis de Bourbon, Count de Vendôme, was taken prisoner at the battle of Agincourt in the early part of the fifteenth century; he was carried to London, and confined in the tower, were he made a vow or prayer to the "sacred tears" of our Saviour for his deliverance. Shortly afterwards he contrived to make his escape from the tower, and to return to Vendôme; where, in order to commemorate his liberation, he ordered that the magistrates of the town should, every year, liberate a prisoner or criminal. The manner in which this order was, for a long period of years, obeyed was thus:—On Good Friday a grand procession was made through Vendôme, in which one of the persons carried a vessel containing what was announced to be the sacred tears which Christ shed on the tomb of Lazarus. After this came a prisoner, clothed in simple drapery, and holding a wax taper in his hand, and who, at the end of the ceremony, obtained his liberty. This privelege, of liberating a prisoner, was attacked and opposed at the commencement of the eighteenth century, on the ground that it had not been confirmed by letters patent from the king; but the celebrated d'Agues-seay, Chancellor of France, was of opinion that, notwithstanding this defect in form, it ought to be permitted, on condition that the prisoner who was liberated was worthy of pity: on these terms a letter patent was granted by the king, and the custom continued in vogue for some years after that time.

Vendôme is situated upon the Loir, on two collateral islands. Besides five parish churches, it comprises the ruins of the abbey of the Benedictines of the Trinity, founded by Geoffery Martel, count of Anjou, in 1032. A hill which commands the town is crowned by the ruins of an ancient castle, the

residence of the Dukes of Vendôme, and which was destroyed during the first French revolution; on which occasion the tombs of many of the Bourbon princes were violated. The town is said to be both badly laid out and badly built. The ruins of the abbey to which we before alluded have been applied to various purposes: the cloisters have been converted into barracks, the convent church into a parochial church, and the grounds into public walks. Vendôme was anciently fortified, and was taken by Henri Quatre during the wars of the league: the walls and fortifications have been since destroyed. Before the French revolution, Vendôme contained a convent of Cordeliers, another of Capuchins, a third of Ursulines, another of Daughters of Calvary, and another of the Grey Sisters; but many changes have occurred in this respect since those times.

There are often conflicting accounts given of the appearance and beauty of a town; and Vendôme is not exempt from it. We have just stated, on the authority of one writer, that the town is badly laid out and badly built; but the following notice by Malte Brun gives a somewhat different account. "The Loir divides itself into several branches near Vendôme, which stands below a hill covered with fruitful vineyards. *The town is well built*, and the college is not inferior in point of architecture to any in France; the finest buildings are those in the vicinity of the horse barracks, and no view near the town can be compared with the one which may be seen from the ruins of the ancient castle."

In 1776 one of the divisions of the military school was established at Vendôme, and the buildings of this ancient seminary now form a college. Besides the buildings which we have named, there are a library, an agricultural institution, and baths. The manufactures carried on in the town are chiefly serges, woollens, cotton, leather, gloves, paper, earthenware, and glass; and at Bezay, near Vendôme, is a manufactory of water-proof linen.—The population is about 7000.

Among the persons of note who have been born at Vendôme was Pierre de Ronsard, who was styled the prince of the poets of his own day. "Ronsard," says a writer in the *Biographie Universelle*, "affords an example of the instability of literary reputation, when it is founded on good fortune or accident, instead of real merit. Ronsard, elevated too high by his contemporaries, has been estimated too low since his death." He was born in 1524, and contrived to gain the favour of no less than four kings of France, Henry II., Francis II., Charles IX., and Henry III. He wrote hymns, odes, eclogues, epigrams, sonnets, and other pieces, and died in 1585.

Nicholas Bandot, and Jacques Adam, were also born at Vendôme. The former was an historian of considerable merit; and the latter was a member of the French Academy.

WHEN constant Faith and holy Hope shall die,
One lost in certainty, and one in joy,
Then, thou more happy power, fair Charity!
Triumphant sister, greatest of the three,
Thy office and thy nature still the same,
Lasting thy lamp, and unconsumed thy flame,
Shalt stand before the Host of Heaven confest,
For ever blessing, and for ever blest.—PRIOR.

What greater blessing than a heart at ease?
What greater curse than an unsettled mind?
The one of all things views the brighter side,
And cheerfully the light bestowed enjoys:
The other through the mist of discontent
But partially obtains the view of good,
And loses thus the way which leads to peace.

ON THE FASHION OF WEARING BEARDS.

AMONG the various modes of personal decoration which have from time to time been employed by different nations, the fashion of wearing *beards* is not the least remarkable, whether we regard the beard itself, or the changes which have occurred in its form and fashion.

Trifling as we may deem the subject, it has been the burden of a volume of four hundred folio pages, written by Ulmus, of Padua; in which the author has endeavoured to prove the importance of the beard, and to attach to it, indeed, a degree of reverence which few persons would be disposed to admit.

The importance of the beard among the Jews is well known: and on this subject we will avail ourselves of the remarks of the Rev. Mr. Smedley.

The Lawgiver of the Jews did not think it beneath the dignity of his code to introduce into it an especial ordinance concerning the fashion of the beard. "Thou shalt not mar the corners of the beard." (Levit. xix. 27.) By the "corners," the commentators understand the extremities; and this precept, no doubt, like the others in the same chapter, arose from the leading policy of the Theocracy, which sought to create a people in everything distinct from and unmixed with the idolaters by whom they were surrounded. Holy Writ more than once alludes to the fashion of shaving the beard during seasons of mourning. The burden of Moab is partly figured in the warnings of Isaiah, by a declaration, that "every beard is cut off;" and again, in similar strains, by Jeremiah, that "every beard shall be clipped." In the letter attributed to the last mentioned prophet, at the end of the Apocryphal Book of Baruch, we read of the priests of Babylon in like manner, that "they sit with their heads and beards shaven."

The same writer adduces instances of the contrary practice among the Israelites, *i. e.*, the practice of letting the beard grow during seasons of mourning. The son of Saul, grateful for the favour which David had manifested to him alone, amid the fall of his father's house, was sorely grieved when the conspiracy of Absalom forced the king to abandon his capital; and among other demonstrations of sorrow, it is mentioned, that he had not "trimmed his beard" from the day the king departed, till the day he came again in peace. (2 Sam. xix. 24.) The abhorrence which Moses instilled into the Hebrews, of any contamination by the Gentile custom of shaving the beard, is strongly exemplified also in the indignation which was felt by the ambassadors of David, when they were foully outraged by Hanan, the Ammonite. That prince, deluded by evil counsellors, rejected the message of condolence upon the decease of his father, which had been sent by the Israelitish monarch; and giving too easy credence to the suggestion, that they came to search and spy out his city, he insultingly commanded one half of their beards to be shaved. "The men," we are told, "were greatly ashamed;" and David, respecting their honourable feelings, permitted them a temporary retirement to Jericho, and did not summon them to their duties about his court until their beards were grown again.

To pass from the Jews to the other nations of antiquity, we find that a full, luxurious beard was recognised as a symbol of manly beauty. Homer speaks admiringly of the white beard of Nestor, and also of that of old King Priam. Virgil tells us that Mezentius' beard was so thick and long as to cover all his breast; and Chrysippus praises the noble beard of Timotheus, a famous flute-player. Pliny speaks of the white beard of Euphrates, a philosopher of Syria, and takes pleasure in relating the respect mixed with fear with which it inspired the people. Plutarch speaks of the long white beard of an old Laconian, who being asked why he let it grow to such a length,

replied, "It is that, seeing continually my white beard, I may do nothing unworthy of its whiteness." Strabo, Diodorus, Juvenal, Perseus, and other ancient writers, make repeated allusions to long beards, and to the respect which they acquired for the wearers. A beardless man, until the days of Alexander, was hardly known at Athens: indeed, to shave the beard was long considered a mark of infamy and effeminacy in that city.

The Egyptians were accustomed generally to shave their beards, except in times of mourning or calamity. The Romans, according to Pliny, did not begin to shave till the year of Rome 404, when P. Ticinius brought over a colony of barbers from Sicily. Persons of quality had their children shaved for the first time by a person of the same or greater quality, who, by this means, became godfather of the children.

The annalists and historians of the middle ages relate many curious circumstances respecting beards. King Robert, of France, in the tenth century, was as famous for his long white beard as for his martial exploits. In order that it might be more conspicuous to the soldiers when he was in the field, he used to let it hang down outside his cuirass; and this venerable sight encouraged the troops in battle, and served to rally them when dispersed. It is said that a painter in Germany, named John Mayo, had so large a beard, that he was nicknamed *John the Bearded:* this beard was of such a length that he wore it fastened to his girdle; and though he was a very tall man, it hung upon the ground when he stood upright; he took the greatest care of his extraordinary beard, which he would sometimes untie in the presence of the Emperor Charles the Fifth, who took great pleasure in seeing the wind make it fly against the faces of the lords of his court. The beard of Henry the Fourth, of France, was looked upon as a model for the rest of Europe; and when the assassination of Henry had placed the crown on the brows of a beardless youth, Sully, the faithful minister of Henry, refused conformity to the fashion of the new court, and considered the retention of his beard as an act of loyalty to the memory of his deceased friend and sovereign. When he was called to court by Louis the Thirteenth, he appeared in his long beard; and the young smooth-shaven courtiers laughed outright at the grave look and old-fashioned appearance of the venerable minister; on which the latter, probably jealous of the honour of his beard, observed to the king, "Sir, when your father, of glorious memory, did me the honour to consult me on his great and important affairs, the first thing he did was to send away all the buffoons and stage dancers of his court."

The gravity of the Spanish character accords well with a long beard; consequently we find that beards were much cultivated by them in past times. Philip the Fifth was the first sovereign who dispensed with a beard; after which, as in other cases the courtiers copied the example of the king, and the people copied the courtiers. Yet it was a change which for a long time was not relished; and there was a proverb current afterwards, "*Desde quo no hay barba, no hay mas alma,*"—"Since we have lost our beards, we have lost our souls."

Peter the Great imposed a tax on beards in Russia. He ordered that the noblemen and gentlemen, tradesmen and artisans, should pay a hundred rubles for the privilege of retaining their beards; and that the lower class of people should pay a *copec* for the same liberty; and he established clerks at the gates of the different towns to collect these duties. Such a new and singular impost troubled the whole empire, and complaints were heard on all sides. But Peter was inflexible, and his subjects were forced to yield; "the Russians," as has been observed, "coming to the conclusion, that it was better to cut off the beards than to give serious offence to a man who had the power of cutting off heads."

It is related, that after John de Castro had taken the Castle of Diu, in India, during the reign of Catharine, queen of Portugal, he found himself obliged to ask the inhabitants of Goa to lend him a thousand pistoles for the maintenance of his fleet; and as a security for the sum he sent them one of his whiskers, telling them "All the gold in the world cannot equal the value of this natural ornament of my valour; and I deposit it in your hands as a security for the money." In a short time the required sum of money and the whiskers were sent to De Castro.

In Britain, fashion regarding beards fluctuated greatly for many centuries. William the Conqueror ordered beards to be shaven, much against the inclinations of his subjects. Other monarchs patronised beards; and it appears as if few articles, even of dress, had suffered more changes. There is a curious anecdote told of Sir Thomas More. He was a distinguished man in his time; but, falling a victim to court intrigue, he was condemned to the scaffold. When he had laid his head on the block he perceived that his beard was likely to be hurt by the axe of the executioner; on which he took it away, observing, "My beard has not been guilty of treason; it would be an injustice to punish it."

The peaked beard of Charles the First's reign is well known: this appears to have been discarded by Charles the Second; and the clean-shaven chin appears to have retained its supremacy among us for the last century and a half.

The followers of Mahomet are to this day careful in the preservation of their beards, as they make it a point of religious faith; and for a Turk to have his beard cut off is as great a degradation as whipping or branding would be with us.

In the history of the Church there are many enactments respecting the use of beards by the clergy. At one time there was an idea that a shaved chin involved a sort of effeminacy: at another time it was thought that a long beard was indicative of pride and hauteur; and the clergy were, in the first case, ordered to wear beards, and, in the second, to dispense with them. Such mutations and contradictions will ever be the case where fashion has so slight a standard to rest upon:—the admired of one age will be the despised of the next.

It is no uncommon thing for some, who excel in one thing, to imagine they may excel in everything, and, not content with that share of merit which every one allows them, are still catching at that which doth not belong to them. Why should a good orator affect to be a poet? Why must a celebrated divine set up for a politician? or a statesman affect the philosopher? or a mechanic the scholar? or a wise man labour to be thought a wit? This is a weakness that flows from self-ignorance, and is incident to the greatest men. Nature seldom forms an universal genius, but deals out her favours in the present state with a parsimonious hand. Many a man, by this foible, hath weakened a well-established reputation.—MASON.

SUPPOSE a virtuous man has drawn on himself a great misfortune, by a fault incident to human nature, and therefore venial; the remorse he feels aggravates his distress, and consequently raises our pity to a high pitch; we at the same time blame the man; and the indignation raised by the fault he has committed, is dissimilar to pity: these two passions, however, proceeding from the same object, are forced into a sort of union; but the indignation is so slight as scarce to be felt in the mixture with pity.—LORD KAIMES.

IMPORTANCE OF SKILLED LABOUR.
No. I.

LABOUR in order to the being perfect in which requires an apprenticeship during youth, of from four to seven years, is usually called *skilled labour*. This period, of course, may be longer or shorter according to the nicety of the work, the time necessary to form the habits and acquire the mental and manual dexterity of an adept, and the natural disposition and powers of application possessed by the apprentice. The essential importance of skilled labour to a country's well-being, may be imagined by supposing that the population of any town in Britain, was to awake some morning from a sleep, in which every craftsman had forgotten the rules of his art, and lost the manual dexterity he had acquired since first he began his apprenticeship. What confusion, what dismay! How many wants to be supplied, how many blundering attempts to supply them! How many messages to the neighbouring towns for tailors, shoemakers, &c., and how many persons thrown idle in the town we have supposed to be the scene of this calamity.

Skilled labour among the ancients of Western Europe was confined to slaves, in all those branches which do not come under the denomination of the fine arts, such as sculpture and painting, but its importance and the superior value of those slaves who were particularly able and neat handed, seem to have helped towards the raising of that forlorn part of the community. From the decline of the Roman empire down to our own days, we find skilled labour gradually emerge from its debasing association with slavery, to the first, or almost the first rank, among the sources and defences of a well-ordered, safe, and beneficial liberty. It formed the basis of those corporations and municipalities which gradually restored society from the confusion and lawlessness of pure feudalism, to a love of peace and capacity for estimating and improving its advantages. Wise sovereigns saw how important it was for the consolidation of their government to encourage, by special privileges, communities who gloried in their devotion to the useful arts, as much as the feudal barons who surrounded them, gloried in war and turbulence. Industry was honoured by becoming a title, and indeed an indispensable title, to municipal rank and power. Mere wealth gave no claim to either. Its possessor must have earned his way to them by one or other kind of useful industry. The two great divisions were that of the burgesses who bought and sold, constituting the guilds, and that of craftsmen who made and manufactured, or in any way increased the value of raw materials, and who were formed into trades corporations. No state of things could present a greater contrast to that of the ancient states, in which the mercantile professions were despised, and skilled labour confined almost exclusively to slaves.

It may be worth notice, in passing, that in the East, guildries and corporations were rendered unnecessary from very early times, by no dishonour, but the reverse, being associated with buying and selling, and by the cultivation of skilled industry being provided for by the singular institution of *castes*. By that institution certain families, in all their generations, are confined to certain employments, and as it is guarded by religious sanctions, there has long ceased to be any necessity for such encouragements to skilled industry as the municipalities of the West supplied. The grand evil of this device has been that it exposes the people, without the possibility of helping themselves, to the caprices of absolute monarchy, and makes their welfare almost absolutely dependant on the personal character of their rulers. In Western Europe the burghers themselves have generally formed their own soldiery, assisted by mercenaries where they could afford it and necessity required. Hence every municipality has been an obstacle in the way of a tyrant's lust of power, and a barrier, too, against foreign conquest, while in civilized Asia, the military caste being distinct from the civil ones, too often either ministers to the tyranny of a native despot, or timidly succumbs before invasion from abroad.

Corporations, however, like all other human institutions have been subject to perversion and abuse, arising sometimes from mere ignorance of their true design, but more frequently from selfishness in those who formed them. First, instead of skill and industry acquired in the faithful discharge of an apprenticeship to a member of their own body, and under careful provisions as to the religious and moral education of the pupil, being made the sole ground of admission to corporate rights, money was taken either as a direct means of admission or as a means of compounding for a relaxation of the rules. But a far worse evil was the grasping spirit of monopoly, showing itself in extravagant favours to the sons and grandsons of burgesses, and in raising the fees charged for indentures and corporation privileges to such a pitch as almost to exclude strangers. These however are by no means necessary to the system, and perhaps their very worst effect has been that they have disgusted many with the very name of corporations, and prepared the public mind for their virtual suppression, by making municipal privileges no longer dependant on the pledge which a laborious apprenticeship affords a man's interest in the prosperity of the town in which he lives, but on the mere possession of a certain amount of property, acquired anyhow, spent anyhow, and accompanied perhaps with anything but industrious habits of any kind. This charge has been regarded as the death-blow to the skilled industry of our once laborious neighbours, the Dutch, and in France it seems to render the return of the population to that cultivation of the peaceful arts, for which it was remarkable under the sagacious Colbert, particularly where the people were protestants. How far the skilled industry of England, from being less dependant on positive institutions, is likely to survive the depression of corporations, time will shew.

One thing is certain, that the number of English skilled labourers at present employed in their own country is considerably less than what it ought to be. On the one hand we see a multitude of Germans and Scotch in the receipt of high wages, in various departments of honest industry, particularly in London, and on the other hand we perceive a vast population of native labourers who overstock the market for common labour, and almost everywhere are a burden instead of a benefit to the community. To the causes of this anomalous state of things we shall devote another short paper. H.

VAIN is the voice of praise, so rarely just
To erring nature, and to sleeping dust;
Vain all the precepts of the poet's art,
Example only reaches to the heart.

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GENOA.

GENOA, FROM THE RAMPARTS.

CITIES, and the empires or states which contain them, bear a certain resemblance to the human frame: they have a beginning,—weak and humble as all beginnings;—they grow into strength and power, and look proudly on the weaker members of their kind; and then they gradually decline in might, and after a greater or less space of time, become mingled with the dust, and show nothing of their once proud state, except the human frame its bones, and the civic frame its stones. Such was the case with Babylon and Thebes,—such is almost the case with Athens and Sparta,—and such, in a smaller degree, is the case with many cities of Italy; for though Rome, Venice, and Genoa, are still cities of much importance, they suffer in comparison with what they were in bygone ages.

The reason for the change in the state of Rome involves too long a train of historical events for us even to allude to here; but the decline of Genoa and Venice is due almost entirely to commercial causes. The treasures of the East,—the spices, gems, gold, silks, &c.,—have been known in Europe for more than two thousand years; but the route to the East by way of the Cape of Good Hope has been known only three centuries and a-half. Before the discovery of this passage, therefore, another mode of transfer of Eastern goods was necessary. The principal modes adopted were two; one of which was to travel through India, Persia, Arabia, Syria, Egypt, &c., by caravans, containing several hundred merchants, with their camels loaded with merchandize, and so to proceed to some port at the eastern end of the Mediterranean Sea; the other mode was, to ship goods at any of the ports of India, Persia, and Arabia, sail through the Persian Gulf, and up the Red Sea; land the goods on the Isthmus of Suez; and finally ship them again at the Mediterranean shore of that isthmus.

The goods thus shipped were landed at some European port; and Genoa and Venice derive a large portion of the power which they possessed five hundred years ago, to the circumstance that they were the chief ports at which the commerce between the East and West was carried on. But when the Portuguese discovered the route to India by way of the Cape of Good Hope, a blow was given to the two Italian ports, which, aided by political events, lowered them from their proud standard, which they have never since regained.

The city of Genoa is situated on the western extremity of Italy, in the middle of a crescent-like gulf, extending from France to Tuscany; and is itself enclosed in a bay or harbour by two moles jutting out into the sea, and approaching to within half a mile of each other. The streets and houses of Genoa extend round the shores of the harbour for the distance of a mile and a-half; and rise one above another as they recede to a hilly background, which is crowned with batteries, and fortifications; the whole external boundary of the city on the land side being nearly eight miles.

The city is described as being extremely splendid, as it appears when approached from the sea, on account of the sumptuous marble palaces which are seen ranged on the sides of the surmounting hill: these splendid erections were the residences of the

Genoese patricians, when the republic was in the height of its glory. Upon entering the streets of the city, however, an inhabitant of London would have cause to complain of their narrowness, which gives them an appearance scarcely compatible with the splendour of the houses. Narrow streets form a feature in many continental cities, of otherwise great magnificence and importance.

The interior of Genoa (says Eustace) does not, in my opinion, correspond with its exterior grandeur. Like Vienna, it is composed of well-built lanes, and contains no wide, and only three beautiful streets,—the *Strada Balbi*, *Strada Nova*, and *Strada Novissima*. The Strada Balbi commences from a square called the *Piazza Verde*, surrounded with trees of no luxurious growth; but at one end a magnificent double flight of stairs, and houses, gardens, and churches, intermingled, rising in terraces one above the other, give it a pleasing and romantic appearance. The same street terminates in another square called the *Piazza del Vastato*, whence begins the *Strada Novissima*, which forms a sweep, and joins the *Strada Nova*, that opens into a lesser square called *Piazza delle Fontane Amore*. These three streets, though not sufficiently wide perhaps for our taste, especially considering the elevation of the buildings that border them, are, strictly speaking, composed of lines of lofty palaces, some of which are entirely of marble, and all ornamented with marble portals, porticoes, and columns. The interior of these mansions is seldom unworthy of their external appearance. Marble staircases, with bronze balustres, conduct to spacious saloons, which open into each other in a long series, and are all adorned with the richest marbles and tapestries, with valuable paintings and gilded cornices and panels. Among these palaces, many of which are fit to lodge the first sovereign of Europe, and indeed better calculated for that purpose than most transalpine palaces, those of *Doria*, of *Sera*, of *Balbi*, and of *Durazzo*, may perhaps be mentioned as pre-eminent in magnificence.

But since Mr. Eustace wrote, Genoa has become more and more like a modern commercial sea-port, and her marble palaces are but little in accordance with the scenes that surround them. When Lady Morgan visited Genoa, she found the entrance halls of these palaces occupied by *cobblers*, *stocking-grafters*, and other humble artisans. In one of the porticoes, she found a *matrass-cleaner* at work; and in the nobler apartments of another, the ante-room was occupied by a *laundress*. Several of the lower and lesser rooms were hired out to poor tradesmen; and a strange mixture of wealth and poverty was observable in most of them. We may give some idea of these palaces by briefly describing that of Durazzo. Above the ground-floor there are two grand stories. The portal, of four massive Doric pillars, with its entablature, rises as high as the balcony of the second story. The front has two-and-twenty noble windows in width. The portico, which is wide and spacious, conducts to a staircase, each step of which is formed of a single block of Carrara marble. A large antechamber then leads to ten saloons, either opening into one another, or communicating by spacious galleries. These saloons are all fitted up with surpassing richness.

There are several fine churches in Genoa. That called *Di Carignano* is approached by a bridge of three wide arches, thrown over, not a river, but a deep dell, now occupied as a street; and the passenger is surprised, on looking over the parapet, to see the roofs of several houses six stories in height far beneath him. The church is a square building, adorned with Corinthian pilasters. The four sides have similar ornaments and similar pediments, and from the centre rises a dome. The interior is in the form of a Greek cross. It is a striking instance of the wealth of the patrician families of Genoa of by-gone times, that this church was built at the expense of a noble Genoese named *Sauli*, and that the bridge which leads to it was erected by his son to facilitate the approach to the church. There is a noble view from the church, comprising the greater part of the city, the port, the moles, and the surrounding hills.

The metropoliton church of San Lorenzo was erected in the eleventh century, and bears great evidence of its antiquity. The architecture is Gothic, and the building is cased with black and white marble. The martyrdom of St. Lawrence is depicted on the façade in basso relievo. The entrance consists of three grand doors, with lofty pointed arches, and circular windows above.

Genoa is not deficient in charitable institutions for the relief of the poor and afflicted. There are two hospitals, one called the *Great Hospital*, and the other *Albergo dei Poveri*, both of which are admirable for their magnitude, interior arrangement, and excellent accommodation. Mr. Eustace states that the noble family of *Kugars* were accustomed to lay out each day a sum equivalent to thirty-two pounds English, in providing food for all the poor who came to claim it. Another nobleman, having no heirs, devoted his whole property, even during his own life, to the foundation of an asylum for orphan girls, who, to the number of five hundred, were educated and provided with a settlement for life, either married or single, at their option. Mr. Eustace makes some judicious remarks on the frequent union of commerce and charity, and cites London and Genoa as honourable instances of it:—

> The genius of commerce, and the spirit of charity, in these capitals, move hand in hand, and act in unison. The riches collected by the one are dispensed by the other; so that if commerce fills her store-houses, charity holds the keys. While the one is laying the foundation of a mole, the other is erecting a church; while the former is building a palace, the other is endowing a hospital; while commerce enjoys the repast in the magnificent hall, charity sits at the gate and dispenses food to the hungry.

Some of the streets of Genoa are said to be so narrow, that opposite neighbours may shake hands together at their windows. The lower class of dealers are accustomed to arrange their wares in front of their shops, or along the narrow pathway, where they sell their fruit, flowers, vegetables, or maccaroni, or occupy themselves by spinning, knitting, sewing, singing, or gossiping. There is one street occupied exclusively by goldsmiths, for the middle and lower classes are even more fond of personal trinkets than the upper: clasps, rings, earrings, chains, combs, pearls, coral, &c. are made expressly for the humble classes,—probably of an inferior quality.

Besides the buildings we have mentioned, there are, in Genoa, a theatre, an university, a royal college, six commercial schools, and courts of legislature and of justice.

The changes in the form of government at Genoa have been briefly these. Genoa belonged to the Romans until the fall of the empire, when it passed into the possession of the Longobardi, or Lombards. From these the Emperor Charlemagne wrested it, and placed it under the government of a court. But when, about the year 1100, contests arose respecting the crown of Italy, the Genoese, who had enriched themselves by commerce, resolved to be the foot-ball of contending monarchs no longer, and placed themselves under a consul, to be elected by themselves. This mode of government lasted about a century, and was succeeded by the annual election of a *Podesta*, or magistrate, from some neighbouring state, on account of the rivalry between the native patrician families. From the year 1270 to 1340, one continual scene of discord ensued, arising from the attempts of the nobles to get all the power into their own hands,

and the determination of the plebeians to prevent them from so doing. At length, to get rid of these discords, it was resolved to appoint a magistrate called a *Doge*. This governor was elected for life, but the succession was not hereditary, the election taking place at the death of the last Doge.

This latter mode of government continued for nearly two hundred years; but stormy scenes marked nearly the whole of this period. Each party in the city had their favourite to propose as Doge, and many Doges were put to death by violence: often, indeed, several Doges were elected at one time. At length, in 1528, Andrew Doria succeeded in obtaining a change in the government by limiting the period of each Doge's government to two years, with a council to assist and control him. The government was aristocratical, that is, the names of all the noble families were enrolled in a book, and from them and them only could the Doge and other officers of the government be chosen.

This lasted for more than two centuries and a half; when Genoa became one of the many states destined to be disturbed by Napoleon Buonaparte. The French first assisted the plebeians to gain the ascendancy over the aristocracy, and then took the government to themselves. After many changes of success, Genoa was formally incorporated with France in 1805, and so continued until the end of the war, when, among the many regulations for the settlement of Europe, one was that Genoa should be united to and form part of the kingdom of Sardinia; and this arrangement still continues. We thus see that Genoa has undergone as many changes of government as larger territories. When we speak of Genoa as a territory, we must bear in mind that it has for centuries included within its rule a portion of the surrounding country, extending along the shore of the gulf of Genoa.

During the political changes above enumerated, the republic of Genoa had many wars with other nations; but these form no part of our subject: it is more to the purpose to say, that her commercial transactions grew into great magnitude about the fifteenth century, and that it declined to a low ebb down to the end of the last century, since when it is understood to have revived again. Genoa must either have been a commercial city, or nothing of note, for the soil is extremely barren near it, and cannot even afford food enough for the inhabitants; nor does there appear to be many mineral riches near it. All these circumstances the Genoese have well known, and have wisely directed the chief part of their attention to commerce.

Genoa is a garrisoned town, the residence of a governor-general, and of a senate or high court of justice. The codes of laws, both civil and commercial, introduced by the French, have been retained. The Genoese manufacture silks, woollens, cottons, and paper; and export, besides these, rice, hemp, and oil: the whole of their exports amounting to about two millions annually. The imports amount to three millions, and are brought from all the eastern parts of the Mediterranean.

The Genoese form the best sailors in the Mediterranean; and the middle classes are well calculated for commerce. Their general character is said to be shrewd, active, parsimonious, and industrious. The population of the whole Duchy is about 208,000, of whom 94,000 reside within the walls of the city, and 22,000 in the suburbs of San Martino and San Pere d'Arena. The city appears to be governed in a very conciliatory spirit by its present sovereign, the King of Sardinia.

BYCKNACRE PRIORY, ESSEX.

THE above wood-cut represents the remains of one of those buildings with which England was in former times so largely supplied; we mean priories, monasteries, and other establishments connected with a form of worship which has since ceased to be, and which we hope never again will be, the established faith of this country. Different feelings are excited when we think of the change of religion which took place three hundred years ago in England. Viewed in its more important light, we regard it as a blessing to the country; but viewing it in the less prominent feature of its connexion with, and influence on, the beauty of architecture, we cannot but feel some regret at the decay and demolition of the beautiful Gothic structures which were so profusely scattered over the face of the country.

The building with which we are now concerned did not share the fate of many of a similar class: it was not destroyed or dismantled at the Reformation; for it had previously suffered so much from the wearing effects of age, that it was scarcely worthy of the attention of the commissioners to whom was committed the investigation of monastic establishments. Bycknacre Priory is situated in the parish of Woodham-Ferrers, a little at the right of the road leading from Danbury to Woodham Ferrers. The ruins of it still existing are, as may be seen, exceedingly small, but it was once probably an extensive place. It was a priory of regular canons of the Augustine order, and dedicated to the Virgin Mary and to John the Baptist. The priory was built and endowed by Maurice Fitz-Geoffry, Sheriff of Essex, in the reign, and chiefly at the expense, of King Henry the Second. In the thirteenth year of the reign of Edward the First, several grants were made to the priory. The king gave leave to the prior to impark or inclose his waste land in Woodham-Ferrers, amounting to sixty acres: Andrew de Woodegrie gave forty acres in East Haningfield: John Toleberle and John Turpyne gave thirty acres in Danbury: all of which were given to the priory; and within a few years afterwards, several gifts of a similar kind were made, by which the revenues of the priory were much increased.

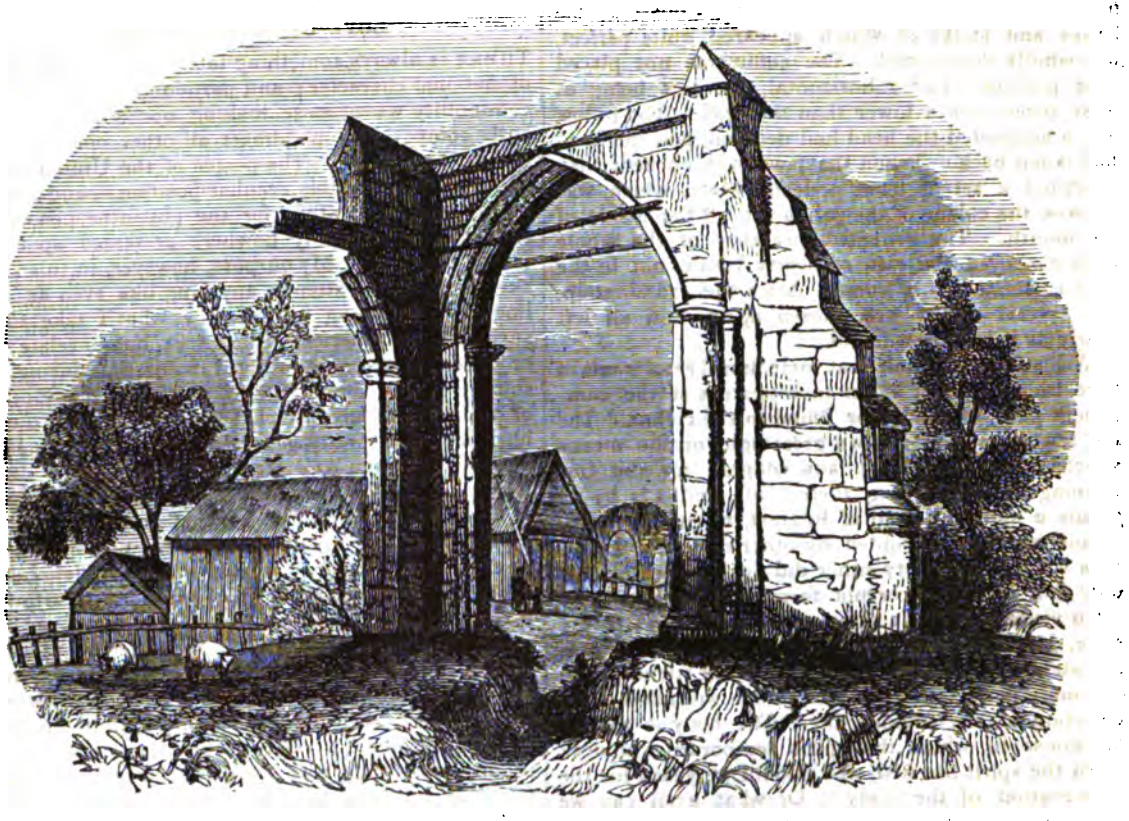
Morant, in his *History of Essex*, says,

> About the beginning of the year 1506, this priory, through the carelessness of its governors, and other accidents, was grown so poor, that at the death of Edward Golding, the prior, there was but one monk left in the house, and it became in a manner wholly neglected. Whereupon, the prior and convent of Elsingspittle, without Bishopsgate, London, procured, 21 April, 1509, license from King Henry the Seventh, to have this priory of Bycknacre, with all its lands, &c., united and appropriated to their hospital; which was done the ninth of November following. But one of this priory's manors in Woodham-Ferrers was then, or about that time, annexed to the hospital of St. Mary of Bethlehem, London.

When an inquisition or investigation was afterwards made into the value of the possessions which had belonged to the priory, it was found that they consisted of the manor of Bycknacre, thirty messuages, three hundred acres of arable land, forty of meadow, sixty of wood, five hundred of pasture, and sixty-two of marsh land, together with certain privileges in the neighbouring towns.

Upon the dissolution of monasteries, the manor to which the priory had belonged was granted by Henry the Eighth to a private family; and since that time it has frequently passed from one family to another.

We have said that this priory is situated near the road leading from Danbury to Woodham-Ferrers. The village of Danbury is delightfully situated on the sides and summit of the highest hill in Essex; and



RUINS OF BYCKNACRE PRIORY.

it received its name of Danbury from its having been a fortified place belonging to the Danes, many records of its former destination being still visible. An alarm beacon stood near the ground on which the parsonage house has been erected; and at the south-east from the church, near the glacis, a watch or guard house stood. The lines of the ancient encampment are still visible, within and beside which the present town is situated. The glacis (which is a slope exterior to the ditch and wall of a fortified place) on the north side is nearly thirty feet deep; and it may also be traced on the other sides. There is every reason to believe that this was a castle or town of the Danes, and was one of their strongholds during the early part of their sojourn in England.

The church at Danbury is situated on the summit of the hill, and within the area of the ancient encampment. There is a nave, north and south aisles, a chancel, and a stone tower at the west end, containing five bells, and surmounted by a lofty wooden spire, which, from its elevated situation, serves as a sea-mark: indeed, the situation is so exposed, that the church has more than once suffered from lightning and from high winds.

Under one of the aisles of the church are the effigies of two cross-legged knights, curiously carved against the faces of the lords of his court. The beard in wood; and a third is placed at some little distance from them. A lion is sculptured beneath the feet of each of the knights, placed in different postures; so also the knights themselves are represented in different attitudes; one is in a devotional attitude, with his sword sheathed; a second is in the act of drawing his sword; while a third is returning his sword into the scabbard. The most remarkable relic of other days, however, found in this church, was a body buried *in pickle*. About sixty years ago, as some workmen were digging a grave beneath one of the arches in the north wall, a leaden coffin was discovered, about thirty inches below the pavement. This was carefully examined, and a detailed account of the contents was inserted in the *Gentleman's Magazine*. It was the opinion of Mr. Strutt, that the body was that of one of the Knights Templars; and as it may be interesting to see how far a body may be preserved for ages, when immersed in a liquid, we will briefly describe the appearances that presented themselves.

On raising the leaden coffin, there was discovered an elm coffin enclosed, about a quarter of an inch thick, and very firm and entire. On removing the lid of this second coffin, it was found to enclose a shell, about three quarters of an inch thick, which was covered with a thick cement, of a dark olive colour and of a resinous nature. The lid of this shell being carefully taken off, a human body was discovered, lying in a liquor, or pickle somewhat resembling mushroom catsup, but paler and of a thicker consistence: the taste was aromatic though not very pungent, partaking of the flavour of catsup, and of the pickle of Spanish olives. The body was tolerably perfect, no part appearing decayed but the throat and part of one arm; the flesh everywhere, except on the face and throat, appeared exceedingly white and firm; but those excepted portions were of a dark colour, approaching to black. The body was covered with a kind of shirt of linen, not unlike Irish cloth, of considerable fineness: a narrow, rude, antique lace was affixed to the bosom of the shirt; the stitches were very evident, and held firmly. The linen adhered rather closely to the body, but not so much so as to prevent its removal. The coffin or shell not being half full of the pickle, the face and chest were not covered by it. The inside of the body seemed to be filled with some substance, by which it was rendered hard. There was no hair on the head, nor in the

liquor, as far as could be detected, though feathers, flowers, and herbs in abundance were floating, the leaves and stalks of which appeared quite perfect, but wholly discoloured. The coffin was not placed in a position exactly horizontal, the feet being at least three inches lower than the head. The pillow which supported the head had decayed, and the head had fallen back. When the jaws were opened, they exhibited a set of teeth perfectly white, which was likewise the colour of the palate and all the inside of the mouth. The general appearance of the whole body conveyed the idea of hearty youth, not in the least emaciated by sickness. After the examination, the several coffins were closed again, and all left nearly as it had been found.

We cannot but think that some useful results might have been obtained by an investigation of the component parts of the liquor found in the coffins. The last few years have thrown great light on the means which the ancient Egyptians adopted for the embalming and preserving their dead; and it is by no means a subject devoid of interest, to compare such means with those adopted by other nations. In the ages when Christianity either did not exist, or existed only in a rude and corrupt form, the imperfect and often vicious opinions entertained respecting a future state, led men to attach more importance to the preservation of the bodies of their deceased friends, than our more perfect religious knowledge will allow us to entertain at the present day. The body is merely the house in which the spirit temporarily abides: when the spirit has fled, why should we yearn for the preservation of the body? Of what avail can we imagine our most refined art and science, when we consider that awful sentence which was pronounced on man at the fall, "Dust thou art, and unto dust shalt thou return?"

ON AN EXQUISITELY WRITTEN WORK
ENTITLED
WOMAN'S MISSION.

'Tis writ! the labour of a noble mind
And pious heart shine forth before the world,
As beams of sun-light, lively and intense,
Fraught with the spirit of celestial love—
An emanation from Divinity.
Nor less, inspired and sanctified the "thought,"
Which stations *woman* in *her proper sphere*,
And spends itself t' elucidate *her* way—
A sweet and certain, though peculiar, way—
To work God's will, and aid God's purposes,
In the eternal kingdom of His grace.
Go, virtuous offspring of a high-toned mind!
Substance of holy reasoning and love!
Go gently forward! On *thy* tender "mission,"
Range the fair world; till every heart that lives
By draughts of *wisdom*, from its purest source,
Shall relish thy "sweet counsel," and return,
In universal *practice* of thy doctrine.
Meet praise,—to *her* who gave thy being birth,
And *Him* whose glorious cause thou shalt advance!—

T. C.

Let a man have all the world can give him, he is still miserable, if he has a grovelling, unlettered, undevout mind. Let him have his gardens, his fields, his woods, his lawns, for grandeur, plenty, ornament, and gratification: while at the same time God is not in all his thoughts. And let another have neither field nor garden; let him only look at Nature with an enlightened mind—a mind which can see and adore the Creator in His works, can consider them as demonstrations of His power, His wisdom, His goodness, and His truth: this man is greater, as well as happier, in his poverty, than the other in his riches. The one is but little higher than a beast, the other but a little lower than an angel.—Jones of Nayland.

SKETCHES IN AMERICA. No. I.

Love of Sight-Seeing.

There is always something interesting in the study of national character; and particularly so where the community we propose making our study is differently composed from almost all other communities, ancient or modern. The people of the United States of America are in this peculiar position,—and a more highly interesting study for the philanthropist or the statesman is probably nowhere presented upon the face of the globe. My purpose, however, in this short sketch, is not to attempt anything like even an outline of the leading features (or what I take to be such) in the American character; but to relate two or three occurrences which I witnessed during my sojourn in the United States, that, with many others of a similar nature, which I heard of, served to establish me in a pretty generally prevailing opinion,—namely, that the American people possess a rather large share of *curiosity*, and a love of *sight-seeing*.

I will relate a circumstance that greatly excited the curiosity of the inhabitants of the neighbourhood. The Falls of Niagara*, distant from Buffalo about eighteen miles, are at all times viewed with astonishment, even by those to whom the scene is most familiar; for among all the wonders of the New World this is decidedly the most remarkable. During the period since the banks of the Niagara river were first visited by European adventurers, until the event which I am about to relate occurred, no craft or vessel of any magnitude was known to have been hurled over this immense barrier of rock, and engulphed in the abyss of waters below. Indians occasionally had been known to perish, their frail canoes having ventured so close to the head of the Rapids, that in spite of every exertion they could not prevent being sucked down the current; and some three or four instances are on record of white people having lost their lives in a similar manner.

I was myself a witness to an accident that occurred there in the year 1825, to two Americans who had been across the river to the Canada side for a boat-load of apples. They had loaded their light flat-bottomed batteau at a small public-house about a mile above the village of Chippewa, and the same distance, or something more, from the head of the first broken water, commonly known as the Rapids; nearly opposite to Navy Island, since become memorable as having for a short time, been the rendezvous of the rebel Mackenzie and his partisans. The two individuals to whom the apple-cargo belonged previously to their departure from "Yale's Tavern," as the small public-house was called, had partaken too freely of whisky and cider, but were not intoxicated. Where they proposed crossing, the river is very wide—nearly three miles. Having at length gone on board, they commenced plying their oars, but had scarcely made the third of a mile from shore, when one of the oars broke, and the more useful part of it floated down the current. They had no spare oar or paddle, neither had they any rudder to their little craft, so that when the accident took place, their want of precaution flashed upon them, and they appeared so alarmed and excited, that they were incapable of making any endeavour to escape the impending danger. They both seized hold of the remaining oar, pulled the boat's head around and around, apparently frantic with despair,—for their incessant cries were heart-rending. Their efforts did not prevent the boat from being carried downwards by the strong current, and perceiving this, one of them, who was an expert

* See *Saturday Magazine*, Vol. VI., p. 10.

swimmer, leaped into the water and struck out towards the Canada shore. But his efforts were in vain, for before his comrade in the boat had been borne down to the first ledge of rocks in the Rapids, he who had attempted to reach the shore by swimming had sunk to rise no more! Several of us stood upon the bank and were helpless witnesses of their melancholy fate.

The circumstance connected with the Falls of Niagara, which, as I have said, so powerfully excited the inhabitants on both sides of this frontier river, was the experiment of sending a large old schooner (the Michigan,) down the Rapids, and over this stupendous cataract. This vessel was too old to be any longer lake-worthy, for she had long buffeted the billows and the breeze on the uncertain waters of Erie. She was, therefore, of no value beyond the materials of which she was constructed; and a few enterprising individuals, foremost among whom were those connected with the ferries across the river, the owners of public vehicles, and the hotel and tavern-keepers near the Falls, purchased her from her owners. The coming event was advertised in the newspapers, and advantage being taken of the season of the year when the inhabitants of the Southern States, as well as many others from the Middle and Eastern States, are in the habit of making tours into the interior of the country where there happens to be anything attractive, and the Falls of Niagara being one of the chief attractions to tourists in general, vast numbers of strangers were added to the thousands upon thousands of the inhabitants of the adjacent country, who flocked to witness the old vessel make, as the Americans expressed it, the "grand plunge."

In order to render the show as interesting as possible, several wild animals, as well as some tame geese and ducks, were embarked, and everything being in readiness, the schooner was towed down the river to near the mouth of the Chippewa creek, or as close to the commencement of the Rapids as it was safe to venture. Here the old ship, cast adrift, and left to the mercy of the waters, soon got broadside to the current; and in passing over one of the ledges of rocks, she struck so violently against a portion of the ledge, that her masts were carried away, and she soon afterwards nearly filled with water. Although in her swift descent down the roaring and boiling waters towards the great Horse-shoe Fall, the ship never came near either shore, two bears had the sagacity to leap into the troubled waters, and both contrived to reach land. The water-fowl, too, seemed to suspect there was more danger in remaining on board than in committing themselves to the impetuous stream; some of them reached the shore, but others were forced down the cataract. A fox or two, and a racoon, attempted to swim ashore, but it was believed that none of them succeeded, although the surface of the river was so broken and agitated that it was nearly impossible for the most attentive observer to discover what became of them. The "Old Michigan" on reaching the main fall, plunged nobly with the rushing waters, and the next instant disappeared in the huge volume of spray that for ever ascends from the frightful gulf a hundred and sixty feet below.

A few hours afterwards some pieces of shattered planks and timbers were picked up half a mile below the fall; and for some days afterwards similar pieces were seen down the river about Queenston and Fort George; all of which, however, were very small, and so worn and chafed, that it was nearly impossible to ascertain to what part of the vessel they had belonged, or, indeed, whether they had ever belonged to her at all.

On the whole, this seems to have been the most interesting event that had yet happened among the Americans of this section of the State of New York. The schooner was an American, and the show itself was, indeed, got up by the Americans, yet the Canada hotel-keepers at and near the Falls were fully as much interested as their brethren on the opposite side of the Niagara; for the ground being more elevated on the Canada side, afforded the best view of the whole descent of the Rapids, and consequently attracted a larger number of spectators.

Another vessel has more recently made the fatal plunge over this amazing cataract,—the Caroline, a steam-boat belonging to Americans, but employed by the rebels attached to Mackenzie's party on Navy Island. This, however, happened during the dead of the night. The vessel was seized by a party of British-Canadians for a violation of the law of nations; she was towed out into the middle of the stream, set on fire, and sent adrift down the raging Rapids.

On another occasion, but one of a very different nature, curiosity attracted many thousands of persons to the vicinity of Buffalo. The object of the people's assembling at this time was to witness the execution of three young men—brothers—of the respective ages of eighteen, twenty-two, and twenty-four. Executions are of rare occurrence in the United States; murder, and that of the first degree, being nearly the only crime to which the extreme penalty of the law is awarded. These three unhappy young men had been tried and pronounced guilty by a jury of their fellow-citizens, of a cruel and cold-blooded murder, in which their aged parents were also implicated, but as accessaries; hence, as the three sons forfeited their lives at the gallows, the parents were permitted, after several months' imprisonment, to return to their wretched and childless home. The murderers' victim was an Englishman of the name of Love, who had boarded and lodged in the house of one of the three brothers, who was married. The parties were aware that Love was in the possession of property to the amount of fifty or sixty pounds, and that he had neither friends nor acquaintances in that section of the country.

The house in which the murder was perpetrated was an isolated building, in the native forests, at the distance of three-fourths of a mile from the nearest settler's dwelling; and the hour chosen for the barbarous deed was something past ten o'clock at night. While one of the brothers engaged Love in conversation, seated by the fire upon his own hearth, another brother, through a small window in the corner of the fire-place, shot him through the head with a rifle. This happened in the depth of winter, when the ground was hard frozen, and deeply covered with snow. No grave, therefore, was dug,—the murderers satisfying themselves with dragging the body two or three hundred yards from the house, and there pushing it under a fallen tree, and then stopping up the cavity with snow.

For several weeks, no discovery was made. But some promissory notes, drawn in Love's favour, being at length offered in payment by one of the brothers, without being indorsed by Love, some inquiries were made to which so unsatisfactory an explanation was attempted, that suspicion became excited. Other circumstances occurred to strengthen this suspicion,—until at length it was agreed that the neighbours should assemble and search the woods. The body was soon discovered; the whole family were taken before a magistrate, and the evidence, although purely circumstantial, was of such a nature that they were committed for trial.

The house of the murderers was situated, as has been stated, in the woods; and although there were but three other dwellings of settlers within the distance of nearly a mile, yet some individual member of each of these three lone families, had happened to be outside their dwellings when the fatal gun was fired, and on returning into their houses, had each of them remarked upon the circumstance of hearing the distant report of fire-arms at so late an hour, and *of its being in the direction of ——'s, the murderers' residence!* On the trial, various other matters were sworn to, which went strongly against the guilty parties, and the circumstance of the discharge of a gun being heard by the neighbours brought the guilt of the accused men so directly home to the minds of the jury, that they unhesitatingly pronounced a verdict of "guilty." After conviction, all three of the brothers confessed everything connected with the horrid deed, and their confession proved the correctness of the circumstantial evidence.

The gathering on the day of the execution of these wretched men was not limited to the immediate vicinity; for wagon-loads of persons were seen early in the morning pouring in from villages and settlements, twenty or thirty miles distant. Canada, too, added her quota of persons, "curious to witness the execution;" and never had the ferrymen on the river along the frontier, been so actively engaged as on that day. In short, business was at a stand still, and every occupation was neglected for the sake of witnessing this horrid and melancholy spectacle—the execution of three healthy, stout, young men, and these men *brothers*.

I am aware that in the rural districts in England, particularly where executions have been of rare occurrence, the country people have frequently been known to indulge the depraved taste of witnessing horrible sights,—but certainly never to anything approaching the extent to which this was carried by the Americans on the occasion alluded to. B.

Be virtue first thy care, thy wish, thy aim;
Her rules thy standard, her applause thy fame;
To her thy steps let fair discretion lead;
Let truth inspire thy thought and crown thy deed;
Let sage experience guide thy hand and voice;
Be slow to choose, but constant in thy choice;
To mercy's dictates open all thy breast;
Be good, and Heaven will teach thee to be blest!

BISHOP.

He that can apprehend and consider vice with all her baits and seeming pleasures, and yet abstain, and yet distinguish, and yet prefer that which is truly better, he is the true way-faring Christian. I cannot praise a fugitive and cloistered virtue unexercised, and unbreathed, that never sallies out and sees her adversary, but slinks out of the race where that immortal garland is to be run for, not without dust and heat.—MILTON.

How is the world deceived by noise and show!
Alas! how different, to pretend, and know!
Like a poor highway brook, pretence runs loud;
Bustling, but shallow, dirty, weak, and proud:
While, like some nobler stream, true knowledge glides,
Silently strong, and its deep bottom hides.—HILL.

To what amazing heights of piety may some be thought amount, raised on the wings of flaming zeal, and distinguished by uncommon preciseness and severity about little things, who all the while, perhaps, cannot govern one passion, and appear yet ignorant of, and slaves to, their darling iniquity! Through an ignorance of themselves, they misapply their zeal, and misplace their self-denial, and by that means blemish their characters with a visible inconsistency.—MASON.

IMPORTANCE OF SKILLED LABOUR.

No. II.

We proceed to throw some light on the causes of this singular fact, that at the very time when hundreds of thousands of able-bodied Englishmen on their own soil, are dragging out a laborious existence on low wages, tens of thousands of Scotch and Germans are earning wages which not only set them above want, but enable them to accumulate property. Why should the Lowlanders of Scotland, for they are chiefly Lowlanders; still more, why should the Highlanders of that country where they are such, excel Englishmen in employments that require patient intention of the mind, methodical habits, and manual skill? The English, when they are adepts in such crafts, are found superior to the men of all other nations, if we except the French in some peculiar departments. Why, then, should they be displaced by either the Scotch or Germans?

To this question, the first and most obvious answer is, that the class of Englishmen to whom we allude, consists of persons altogether unskilled in any of the handicrafts, whereas the Scotch and Germans bring with them both a certain amount of skill, and those acquired habits which enable them speedily to meet the demands even of London. Thus we are immediately thrown on the inquiry, why Scotland and Germany produce more skilled labourers than these countries require for their own wants, while England produces so many fewer in proportion to the employment it affords?

Necessity acting on minds possessed of a higher amount of intelligence and affection united, is one great cause of this difference. The poor and the labouring classes of Scotland and Germany have been thrown much more than those of England under her poor laws, on their own resources; but then these resources have been those generally of an educated population, and a population, too, whose education is not of yesterday, but which has been maturing for a succession of several generations,—an hereditary thoughtfulness and intelligence in that class of the people. The English peasant loves his children, but it is, comparatively speaking, with a short-sighted and unintelligent affection, as regards the future prospects in life of that child. A Scotch or German father is driven to a harder necessity, perhaps; the resource he dare look to in the poor laws of his country is almost nothing; but that country gives him a good though plain education, and he is heir to a sort of family wisdom, coming to him he can hardly say how, partly from parental maxims, partly from parental example and parental training. His parents are intelligent enough to inquire over a much wider field than a poor English labourer ever dreams of. They learn that if brought up as a common labourer, their boy can have but a small prospect of anything beyond a bare existence, unless his constitution and physical strength fit him for extraordinary exertions. Skill, they perceive, in some one or other handicraft, if accompanied with steadiness and sobriety, is a fortune to a youth of twenty, which it is well worth the application of some six or seven previous years, however ill paid, to acquire. Accordingly, to this all their efforts are directed. For this they labour, and for this they serve. For this they bargain with some neighbouring craftsman, and hard though the terms may be, they would consider themselves penny-wise and pound-foolish, to sacrifice their son for immediate gain, by allowing him to work at anything that would bring in early wages, instead of giving him what to them

may prove no less dear an education, than sending the son to college is to many a poor curate. Not only so, but during his whole apprenticeship, they have their eyes both on his master and him. The master must initiate him into every mystery of his craft, and the boy must grudge no pains in order to attain the skill required for every part of it. He fares hardly for a year or two on what his parents can afford: for another year or two he receives what barely affords him meat and clothes; for the last part of his apprenticeship he may save enough to repay his parents what he has cost them, or to defray a voyage to London, and there he appears in the wide world, with no resources but what are in his hands and his head, and no friends but Providence and those fellow-countrymen whom he can interest in assisting him to get employment, and who, it must be confessed, are seldom slow in doing so. Compare such a youth with a raw untutored clown from some country village of England, and we perceive at once that the advantage is all on the side of the stranger.

But it is not a simple apprenticeship that is necessary for success in life to a great majority of the children of our numerous poor. It must be a *good* apprenticeship, in order to which the parents must co-operate with the master in forming the character and habits of the boy, and serve as a check, too, on careless and selfish masters, who look more to their own gain than the boy's good. It is to be feared that many poor children apprenticed out by parishes and charitable institutions, have not sufficient justice done to them in this respect. Hence, they never make good *hands*, fall out of employment, become dispirited and reckless, and at last sink into the ranks of common labourers or drudges. But poor though intelligent parents who pinch themselves to give their children a good education, both as immortal beings and as artisans, are not likely to permit this. They will be ever inquiring into the minutest particulars of the moral conduct and industrial skill of their child. They will be evermore on the watch to warn him against bad company, neglect of his religious duties, and idleness, and to see that the youth is trained to every part of the employment by which he is afterwards to gain an honest livelihood, instead of being cruelly kept at those only in which it suits his master's convenience to employ him. In order further to increase their general information, and to inform themselves of the latest improvements, or new fashions, to be found in any part of Germany, the artisans of that country, at the close of their apprenticeship, are accustomed to make a tour on foot, in which they visit all the chief towns, and obtain all the information within their reach.

In order for poor parents to apprentice their children themselves, two things seem requisite, besides the intelligence that teaches them the importance of doing so. First, they must have such wages, or honest earnings of whatever kind, as shall admit of something being saved to meet the expense of apprenticing their children; and, second, they must be economical and sober, otherwise even high weekly wages will not suffice. In another paper, we propose to throw out a few hints on good management among the poor, in the hope that they may fall into the hands of some who may take advantage of them for the benefit of their children. H.

Pedantry, in the common acceptation of the word, means an absurd ostentation of learning, and stiffness of phraseology, proceeding from a misguided knowledge of books, and a total ignorance of men.—Mackenzie.

ANSWERS TO BOTANICAL QUESTIONS*.

'Tis dull, morose, to be alone,
A *Pear* is sociable you'll own.
We may suppose that in a dance,
No tree can like the *Caper* prance.
The first tree you expect to reach
Nearest the sea, must be the *Beech*.
I ask, in what tree but the *Bay*,
Could any ship at anchor lay?
Ladies who languish, fret, and whine,
May vent their griefs beneath the *Pine*.
No true chronologist will state
Any event, without a *Date*.
E'en the poor *Crab* so much despised,
Is by the fisher highly prized.
Irish nurse on chair, or truckle,
To her babe, cries "*Honey-suckle*."
When the seared leaves the cold winds stir,
What tree can be so warm as *Fir*?
The housewife if she swept her room
With any plant would choose the *Broom*.
Most trees afford a club for strife,
The *Bread-tree* yields the staff of life.
One tree would say, had it a tongue,
O-range with me the groves among.
To the sad heart, hope—who can give?
There's comfort in thy name, *O-live*.
Should trees fall out and come to knocks,
First in the fray would be the *Box*.
Though Sol's bright rising meets your view,
Still may you see the *Tree-rose* too.
Some trees are quick, we also know,
Others, like lazy folks, are *Sloe*.
Where neither hill nor vale appear,
A *Plane* most likely will be near.
If all, to kiss trees should combine,
Tulips should be prest close to mine.
Some trees for food, and some for use,
But there is only one that's *Spruce*.
Trees facing north, an *Old Man* would
Without doubt call a *Southern-Wood*.
In schoolmasters' flog-botany
Ranks before *Birch* not any tree.
When fairies Cinderella drest,
The *Sandal* her slim ankle prest.
What tree's immortal? I reply
The *Arbor-Vitæ* cannot die.
What tree with billiards finds a place?
I've got my cue—the slender *Mace*.
Cooknies 'tis true, might sup or dine,
But wine would want, without the *Vine*.—D. E.

* See *Saturday Magazine*, Vol. XV., p. 189.

Commerce tends to wear off those prejudices which maintain distinction and animosity between nations. It softens and polishes the manners of men. It unites them by one of the strongest of all ties, the desire of supplying their mutual wants. It disposes them to peace, by establishing in every state an order of citizens, bound by their interest to be the guardians of public tranquillity. As soon as the commercial spirit acquires vigour, and begins to gain an ascendant in any society, we discern a new genius in its policy, its alliances, its wars, and its negociations.—Robertson.

The sinner may invent never so many arguments in favour of the annihilation and utter extinction of the soul; but, after all his subterfuges and evasions, the fear of a future state and the dread of everlasting punishment will still pursue him: he may put it off for a time, but it will return, as Milton says, "with dreadful revolution;" and, let him affect what serenity and gaiety he pleases, will notwithstanding, in midst of it all, "come," as the same poet observes, "thundering back on his defenceless head."—Bishop Newton.

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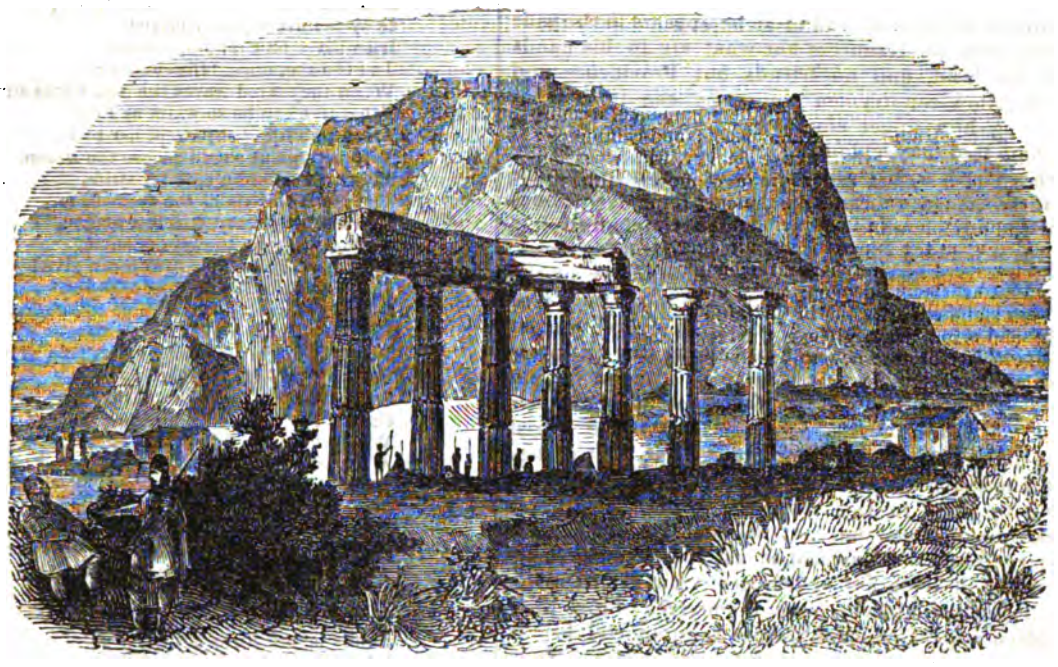
A BRIEF HISTORY OF ARCHITECTURE. No. I.



REMAINS OF THE TEMPLE OF NEPTUNE AT CORINTH.

In Architecture, too, thy rank supreme:
Thou art where most magnificent appears
The little builder man; by thee refined,
And, smiling high, to full perfection brought.
Such thy sure rules, that Goths of every age,
Who scorned their aid, have only loaded earth
With laboured heavy monuments of shame.
Not those gay domes that o'er thy splendid shore
Shot, all proportion, up. First, unadorned
And nobly plain, the manly Doric rose;
The Ionic then, with decent matron grace,
Her airy pillar heaved; luxuriant last,
The rich Corinthian spread her wanton wreath.
The whole so measured true, so lessened off
By fine proportion, that the marble pile,
Formed to repel the still or stormy waste
Of rolling ages, light as fabrics looked
That from the magic wand aërial rise.
These were the wonders that illumined Greece,
From end to end.———

THOMSON'S *Poem on Liberty.*

In a recent Supplement* we bestowed a few hasty glances on the *primitive* houses of several of the rude nations of the globe; and we promised to continue the subject, with a survey of the houses of civilized nations. But the transition is by no means abrupt: it is slow and gradual as civilization itself, the progress of which may be accurately traced by marking the various gradations and retro-gradations of man in the arts of life, through successive ages; sometimes advancing to a degree of splendour which even now excites our admiration, at other times sinking into ignorance and insignificance, such as awaken our pity. To read of the wonders of Babylon and Thebes; and to contemplate existing ruins of the mighty nations that have been; and then to watch the progress of man through many ages of barbarism;—all this serves to remind us of the instability of human things; and that, while we admit man to be eminently progressive, he is subject to retrogression in the arts of life, as well as in morals and religion: also, that nations, as well as individuals, rise from the weakness of infancy to the vigour of manhood, flourish for a while, fall into decay, and then slowly and silently disappear.

The transition from the houses of uncivilized to those of civilized nations, includes an extensive and important history, a slight sketch of which is all that we can hope to supply. It involves, in fact, a history of ARCHITECTURE,—the finest of all the fine arts; one which includes within its extensive domain the science of mechanics, and the resources of much of the sound philosophy of the day; as also a host of minor arts and trades, which are subsidiary to the one great object of erecting a structure, which will not only endure for ages, but command the respect and admiration of man by its noble appearance, its fair proportions, the excellence of the materials employed, the workmanship bestowed upon its details, and its internal arrangements in every respect adapted to the purposes for which the building was designed: all these objects it is the business of Architecture to fulfil; and these objects call for the display of the highest genius and talents, on the part of the architect who is to supply them.

Thus the reader will be enabled to gain a concise idea of the sense in which the term "Architecture" must be adopted. It is restricted to such edifices as display symmetrical arrangement in the general design, and suitable proportions in the several parts, with a certain degree of ornament or enrichment tastefully applied. In this sense the houses of rude nations are not architectural: they are erected for convenience only; generally, in the quickest manner, and of such materials as are most easily accessible. But it may be said that the great object of architecture is, to afford habitations for individuals, and coverings for assemblies; to give shelter and protection amid the Summer's heat, the Winter's cold, and the general inclemencies of the seasons; and likewise safety from the attacks of thieves and ferocious animals;—that these conditions being completely and effectually fulfilled, the objects of architecture are attained. But it has been well observed that architecture bears the same relation to building that literature does to language. The *patois* in which rustics express their wants and exchange their ideas, may certainly be called

* See *Saturday Magazine*, Vol. XV., p. 33.

language, and as such be sufficient for communication between man and man; but no one will pretend that such language is guided by taste or propriety, or is a fitting vehicle for the thoughts and ideas of high intellect and refinement. In the same way the mud wall, the floor of earth, and the turf or bark roof, with a hole in it to afford exit to the smoke may be called a *house;* but surely not one adapted to the wants and desires of civilized man:—the mere heaping of stone upon stone is not architecture; and indeed, whatever be the materials, unless they be combined with taste and skill, the result will be one of but limited utility. As an able writer can exert unbounded power over the mind of his reader by the skilful combination of words, which, taken individually, are insignificant; so the masterly disposition of the skilful architect will dignify the meanest materials.

One of England's greatest architects, Sir Christopher Wren, has thus spoken of his art:—"Architecture has its political use, public buildings being the ornament of a country: it establishes a nation, draws people and commerce; makes the people love their native country, which passion is the origin of all great actions in a commonwealth. It aims at eternity; and therefore is the only thing incapable of modes and fashions in its principles, (the Orders,) which are founded upon the experience of all ages, promoted by the vast treasures of all the great monarchs, and skill of the greatest artists and geometricians, every one emulating each other; and experiments in this kind being greatly expensive, and errors incorrigible, is the reason that the principles of architecture are now rather the study of antiquity than fancy."

A history of architecture at the present time must necessarily be incomplete. We are not in the possession of positive facts respecting the first dawnings of the art among civilized nations: indeed, as each nation must have a history of civilization peculiarly its own, the early chapters of which are now lost, so must the origin of architecture be peculiar to each nation, which has established a mode of building supposed to be peculiar to itself; and to decide what that origin really was, is now for the most part impossible. Accordingly, we find in our architectural literature that the early history of the art among various nations presents much of theory (sometimes founded upon apparently legitimate deductions), and much of conjecture, as is generally the case with civilized man, whether as respects his investigations of the works of nature, or of his own species. He is anxious always to explain what is often inexplicable, either because it is above the powers of his mind, or because Time, in his silent passage over the earth, although sparing as yet some of the more massive structures of man, has swept away the minor details which would have supplied circumstantial evidence of the existence, the manners, the customs, and the state of civilization, among races which have long ceased to exist.

In proceeding to lay before the general reader a brief history of architecture, it is of course impossible, in the short space of two or three supplements, and consistently with the elementary nature of our publication, to trace the progress of the art in all ages, and among all people: nor is it necessary that we should do so; since many historical points connected with architecture are marked with great complexity. The origin of the Orders, for example, is a prolific source of debate; and the more so since nothing is left for us but conjecture: the origin of the pointed arch again is equally obscure; and more than fifty distinct volumes, by as many different authors, have been written on the subject without leading to any satisfactory results. These and similar grounds of contest we shall pass lightly over; and in order to mark our progress distinctly, and to show a proper connexion, we propose to describe some of the broader and more important features which have successively appeared on the face of the art. These may be conveniently digested into eight sections or epochs, thus: *First*, ASSYRIAN Architecture, in which bricks were probably first invented and extensively employed. But of the Assyrian mode we have no definite knowledge, except such as is incidentally afforded us in the Sacred Writings. *Secondly*, EGYPTIAN Architecture, in which granite and marble were worked on an extensive scale, with the adoption of a distinct *style*, as marked by the buildings of Thebes, Dendyra, and other monuments of ancient Egypt. Connected with Egyptian, we may also refer to Indian and Jewish Architecture. *Thirdly*, GRECIAN Architecture, in which we first observe the cumbrous building materials brought under the beauty of proportion, and made to assume graceful ornaments. Between the seventh and fourth centuries before Christ the most beautiful temples were constructed; such as those of Pæstum, Ægina, and Corinth; and also the Parthenon. *Fourthly*, ROMAN Architecture, in which the Arch was probably first employed, if not invented; the use of which we see in works, which the Greeks, for want of it, could never have executed; such as the great aqueducts, bridges, &c. The best period of this style was probably from about A. D. 76 to 138. *Fifthly*, THE FIRST CHRISTIAN ERA, in which the Dome was perfected. We may mark this epoch by the death of Justinian, A.D. 565. *Sixthly*, SARACENIC Architecture, which was derived from the Roman, and became afterwards peculiar to the Mohammedan countries. *Seventhly*, THE SECOND CHRISTIAN ERA, in which the Pointed Arch was introduced, whereby a wonderful lightness combined with strength, and height with elegance, was imparted to the numerous religious edifices which about the thirteenth century were scattered almost everywhere over Europe, and all of them marked by the same general features. *Eighthly*, THE CINQUE-CENTO STYLE, or the revival of ancient art, which, in the fifteenth century, led to the almost sudden abandonment of the pointed style.

I. ASSYRIAN ARCHITECTURE.

THE origin of architecture takes us back to the days before the flood; we are informed in the Holy Scriptures that Cain built a city, and called it after the name of his son, Enoch; but we are not informed of what this city consisted, —neither of the mode of constructing the houses, nor of the quality of the materials. We learn also from the same source, that Jabel was the father of such as dwell in tents; and this form of dwelling may probably include most of the primitive abodes of man in a warm climate, covered perhaps at first with leaves, with the bark of trees, or with the skins of animals killed in the chase. In the time of Noah, man must have advanced considerably in the art of building; because much skill must have been exerted in the construction of the ark, so as to withstand the rage of the storms to which it was so long exposed.

Ashur built the cities of Nineveh, Rehoboth, Calah, and Resen, as we learn in the tenth chapter of Genesis. The art of making bricks must have been well known at the time the city and tower of Babel were built; since we find that the people said one to another, "Let us make brick, and burn them thoroughly. And they had brick for stone, and slime had they for mortar." Gen. xi. 3. We are not told what were the dimensions or figure of this tower: we are only informed that it was the vain intention of those who reared it to cause its top to reach the clouds; so that they might make to themselves "a great name, and be no more scattered abroad on the face of the earth;" or, as it has been with some reason supposed, that they might be in possession of a safe retreat from the waters of another deluge. Their design, however, was frustrated by the intervention of the Almighty, and the buildings remained unfinished. It is quite uncertain whether this city and tower be the same Babylon and tower as described by Herodotus and Strabo. The former says it was a square building, measuring a furlong on each side. From a winding stair, or rather an inclined plane, which went eight times round the exterior, the building appeared eight stories high; and each story being seventy-five feet, the height of the whole must have been six hundred feet: the inclined plane was broad enough to allow carriages to pass each other.

We are informed by Lucian that the temples of the ancient Assyrians were less ancient than those of Egypt. Other historians suppose that the arts passed into the latter country from Assyria, which empire was founded by Nimrod, the builder of Nineveh. About the time of the founding of this city, Troy is said to have been founded by Scamander, while Mizraim, the son of Ham, conducted a colony into Egypt, and laid the foundation of a kingdom. Of the once mighty Babylon the very site is now a matter of dispute; its *supposed* ruins present nothing but shapeless masses of brick, which convey no idea of any style of architecture, or of the progress which the art had once made there.

2. EGYPTIAN ARCHITECTURE.

IT is extremely probable, in the absence of all certain information, that architecture originated more in the devotional feelings of mankind, than in any other way. Diodorus Siculus, in speaking of the ancient Egyptians, says, "They call the houses of the living, *inns*, because they stay in them a little while; but the sepulchres of the dead they call *ever-*

lasting habitations; because they abide in the grave to infinite generations. Therefore, they are not very curious in the building of their houses; but in the beautifying of their sepulchres they leave nothing undone that can be thought of." In India, as well as in Egypt, in Greece and in Italy, in France and in Britain, in Mexico and Peru, ruins have been from time to time discovered of buildings, evidently connected with the worship of the Divinity, the dates of which are far beyond our sources of information. These edifices display various degrees of refinement, and of knowledge of the arts of life; but we seldom if ever meet with buildings intended for the personal accommodation of man in the early ages, possibly on account of the perishable nature of the materials of which they were constructed.

Most writers refer to Egypt, as the country where the sciences were first cultivated, and the arts brought to a high degree of perfection: but this opinion is by no means uncommon, that Ethiopia furnished the land of the Pharaohs with the rudiments of its architecture. It is likewise supposed that Egypt, Nubia, and even India, derived their notions of religious architecture from the same source. In all three countries are found excavations in the rock, of immense extent, and furnished with colossal figures; vast masses of building raised from the earth, with a profusion of statuary and carving; also shrines worked in a single stone; and the whole of these achievements on a scale of such vast extent and magnificence, and the apparent results of such wondrous physical or mechanical powers, that we are disposed to think of the giants who are said to have lived in the days before the flood, rather than of men of the ordinary stature, as the authors of all these splendid works. "No people," says Champollion, "either ancient or modern, ever conceived the art of architecture on so sublime and so grand a scale, as the ancient Egyptians. Their conceptions were those of men a hundred feet high; and the imagination, which in Europe rises far above our porticos, sinks abashed at the foot of the one hundred and forty columns of the hypostyle hall at Karnac."

But, however ancient and wonderful Egypt may be, it is vain to refer to it the origin of all architecture, since it probably happens that every nation which claims a style peculiarly its own, owes that style to natural circumstances, to soil, to climate, to the bounty or to the scarcity with which nature has enriched or impoverished the country; to the religious feelings of the people, and to the ideas entertained by them of a future state of existence. Thus, it was the peculiar tenet of the ancient Egyptians, that, after the lapse of three thousand years, the spirit would return and re-animate the corporeal tenement which it formerly occupied, provided such body were preserved entire and uncorrupt:—hence arose the practice of embalming and preserving the dead; hence arose the preparation of those wonderful labyrinths and pyramids, wherein to preserve the bodily organs until the spirit should be ready to revisit them;—and hence also the object of those sublime and durable works of architecture, which still distinguish Egypt among the nations of the primitive world.

But we must not forget the habits of the natives of hot climes: in their anxiety to avoid the scorching heat of one season, and the incessant rain of another, the natural cavern, or the cavern hewn in the rock by art, offered an agreeable retreat from the one, and a safe shelter from the other. Here, too, it is probable they were at an early period accustomed to prepare a dwelling for their gods, and a convenient asylum for the practice of their religious rites. As civilization advanced among them, and taste naturally improved, they added to their excavated temples a portico, and they sometimes hewed the face of the rock itself into the form of a splendid building.

Although the architecture of the Egyptian presents many features in common with the Hindoo excavations, it does not necessarily follow that they were connected.

It is true that both people believed in the transmigration of souls: both constructed large excavations and enormous insulated monuments. The lotus and the palm were the favourite ornaments of both; their sculptured figures were equally stiff and motionless:—hence it has been considered that the grottoes of the Thebais are children of the excavations of Ellora, and the pyramids of Egypt the offspring of the pagodas of India. But, as Mr. Hope says, there are not sufficient grounds for these inferences. "Those phenomena of nature which are most general, most striking in every country, and in every country influence the condition of the inhabitants most obviously and extensively, would, in every country alike, become the first objects of observation, scrutiny, record, and science; and as architecture, like every other art of utility, must derive essentially out of the peculiar climate, and locality, and productions of the country where it arises, it must consequently, even where equally original and native in two different countries, offer certain coincidences, according to the degree in which these countries possess these features in common with each other, even though intercourse or communication should not have occurred between them."

Egypt and India are both possessed of a hot climate, of a river rising in high mountains, and annually overflowing its lower banks, on which the inhabitants depend for their crops; possessed also of an alluvial soil, intersected, for the sake of necessary irrigation, by many cuts and canals, and both producing animals and vegetables of the same peculiar species. On the waters of the rivers of both regions the *Nymphæa*, or water-lily, and along their banks the banana and the palm, occur in the same abundance. Around this humid and flat expanse rises a circle of arid rocks, fit only for the shelter of goods and stores, for habitations of the living and for receptacles of the dead; and consequently producing in its inhabitants similarity in their modes of life and methods of industry, in their topics of hope or fear, of amusement, study, or contemplation. Thus these two countries present with each other coincidences, remarkable, but accounted for by the nature of the regions in which they exist. "Moreover," says Mr. Hope, "in all countries alike, in the infancy of architecture, inability to enclose a vast extent of space, and to combine solidity with lightness, produces massiness in the parts within, and slope on those without. In like manner, in the infancy of sculpture, incapacity to seize and embody the ever-changing appearances of movement and expression, engenders rigidity of limbs, and immobility of features; and thus we may explain these points of similarity. We cannot, therefore, in Egyptian art, especially in architecture, find any circumstance to warrant us in contesting its claim to originality, or in considering it as derived, much less as imitated, from that of the Hindoos."

The difference between the Hindoo and Egyptian architecture, in point of science, art, and mechanical resources, is also very striking. In the former the most stupendous works are those excavations in the solid rock, in the execution of which patience and perseverance are the chief requisites: their mouldings and general ornaments are repeated to excess, and conceived in the extreme of insipidity and heaviness: their figures often display a preposterous reduplication of limbs, pervaded by a general stiffness due to an infant state of art; and we seldom meet with monuments springing from the earth of great magnificence and difficult execution. But the Egyptians, on the contrary, although quite as stupendous in their excavations as the Hindoos, evince a more determined character this way, in such edifices as the Temple of Thebes and the Pyramids of Memphis, the materials for which are raised on the surface of the ground, after being conveyed an immense distance from the quarry, and are then elevated to a great height, and cut and interwoven with others in the most ingenious and solid manner. The forms and outlines of Egyptian architecture are likewise different in detail: they are beautifully varied and contrasted: and although their figures are to a great extent stiff, yet this stiffness seems due less to the rude skill of the artist, than to those laws which prevented them from varying the original forms and attitudes of these figures, in a country where, as the written language was symbolical, it was deemed important thus to legislate, that, in process of time, the meaning might not be lost in consequence of variations in the forms of the symbols. "Many of those," says Hope, "that are very coarse in their limbs and extremities are exquisitely wrought in the features; and now and then we find a figure of an animal, or even a human being, finished with truth and beauty, which we should in vain seek in India, and which proves in the Egyptians a great though repressed superiority of skill."

It need not excite the reader's surprise, that the early history of the architecture of all nations is connected more with temples, tombs, and religious edifices, than with domestic habitations. In countries where nature yields her fruits abundantly, and almost without culture; where the climate is warm, and shelter and protection scarcely needed, except during certain seasons of the year, it is not wonderful that the natives of any country, like Egypt, should have bestowed most of their care upon edifices of exalted and permanent necessity; impressed, as they were,

with the feeling that they were providing for themselves "everlasting habitations;" while for the construction of their "Inns," or every day abodes, during life, they were content with the fragile materials yielded to hand by the country around, such as the slime and the rushes of their rivers; houses which must easily have been swept away on the decline of civilization. In speaking of Thebes, Denon says: "Still temples—nothing but temples—not a vestige of the hundred gates so celebrated in history; no walls, quays, bridges, baths, or theatres; not a single edifice of public utility or convenience. In spite of all my research, I found only the walls of temples covered with obscure emblems, and hieroglyphics which displayed the ascendancy of the priesthood, who still seemed to preside over the mighty ruins, and whose empire constantly haunted my imagination." Champollion, however, whose valuable researches in Egyptian antiquities, and whose success in the study of hieroglyphic literature cannot be sufficiently prized, speaks of the remains of quays; and many ruins, previously referred to as temples, he calls palaces.

We have on so many occasions* entered into details respecting the pyramids, the colossal statues, the obelisks, the mummy-pits, the subterranean temples, and the colossal figures of Egypt, together with the vast excavations of India, and its enormous idol images, that we need only refer the reader, who is interested in this vast and instructive subject, to the previous volumes of the *Saturday Magazine*, as indicated in the note, and then proceed with our history as it pertains to other civilized nations, as they have successively or cotemporaneously appeared on the surface of the globe.

After India and Egypt, the most ancient ruins generally referred to are those of Persia. The ruins of Persepolis are pointed out as the remains of a once magnificent structure. Its front is 600 paces in length, and the side 390 paces. The architecture is said to be peculiar, but remarkable for correct proportions and beautiful execution. The staircases conducting into the interior are strikingly extensive and magnificent: the portals and capitals of the columns are adorned with numerous figures, representing combats and processions: but many of these are rudely executed. The material of which these ruins consists, is a kind of deep gray marble, very hard and susceptible of a fine polish, which renders it almost black. The stones do not appear to have been originally united by means of cement, but of cramping irons, several traces of which still remain.

It is supposed by some writers and travellers, that the Persian style is but one of the numerous branches of the Egyptian: others think it original; and that the resemblance is rather accidental than imitative; and, that, natural causes producing similar effects, the Persians were constrained to build as the Egyptians and Hindoos did. It is extremely probable that, long before the rise of the Persian power, several kingdoms existed in that country, since called "Persia," of which nothing now remains to inform us from whence the Persian style of architecture was derived.

We are informed by Lucian that the Phœnicians built after the manner of the Egyptians; but no remains of their ancient architecture are left to confirm his information. This primitive nation was civilized at a very early period: its cities, which were numerous, were celebrated for riches, manufactures, and commerce. Tyre and Sidon, Joppa, Damascus, and Baalbec, are the well known names of the cities of this great nation which some writers identify with the land of Canaan, so often mentioned in the Bible.

It is probable that the Phœnician architects employed much timber, instead of stone, in their structures; Mount Lebanon and other places affording them an abundant supply of that material. A large portion of Solomon's temple was probably of wood, in the construction of which the Phœnicians must have been engaged. Vitruvius tells us that sometimes each division of a wall was built alternately with cedar-wood and stones; so that first a course of wood, and then a course of stones, extended from one division to the other. This was probably the case with the temple at Jerusalem and the palace of Solomon; the latter of which is called, in consequence of the great quantity of wood used in its construction, "the house of the forest of Lebanon."

Among the shepherd-tribes of Israel, there seems to have been no impelling necessity for architectural structures. Saul, the first king of Israel, about 1250 years B. C. does not appear to have had a permanent habitation: and at Gilgal, where the most sacred rites of the Jewish faith were solemnized, a temple or monument of unhewn stones was erected by Joshua, on taking possession of the promised land, and making a covenant between God and the people. We find no mention made of any other Jewish architectural work until the time of the building of the temple at Jerusalem, 1004 B. C. on the spot made sacred by Abraham's intended sacrifice. When the tribes were divided into two kingdoms, the national temple of the ten tribes of Israel was erected on mount Gerizim. Towards the end of the reign of David we read that he built himself a house; but even the ark of the covenant was never in a fixed place, until the reign of Solomon: and we read likewise of King David expressing his shame, that he himself had a house of cedar, whilst the ark of the Lord still dwelt in a tent. This king accordingly prepared for the erection of a temple, but it was left for Solomon to complete his father's design. The summit of mount Moriah formed a plane of 36,310 square feet. Upon this plane the temple was built, divided in the same manner as the tabernacle into two chief parts, the Holy of Holies and the Holy Place, and having on the principal front a splendid portico, a hundred and twenty cubits high, probably resembling the entrance to several Egyptian temples. There appear to have been other points of resemblance between the temple of Solomon, and the temples of Egypt, such as the flat roofs, the ornaments of lily or lotus work, and the pillars before the porch, corresponding with the obelisks which were placed before the Egyptian temples. The temples of the ancients were generally without windows: but that of Jerusalem appears to have had them, and of the same form as those observed in the ruins of the great temple of Thebes.

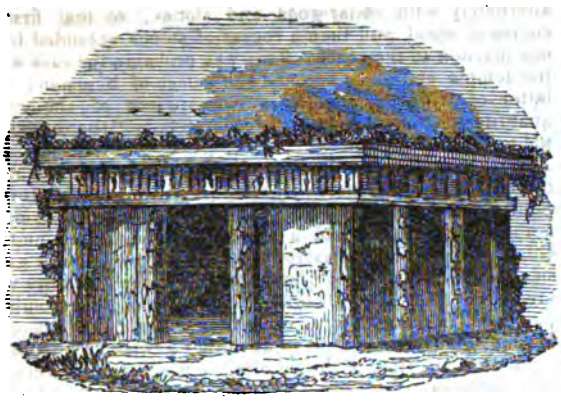
There was a wall or inclosure round the temple, and between this wall and the building was a porch divided into three stories. There were two courts surrounding "the Temple" properly so called, or, in the words, the "Holy of Holies;" the inner court, or that in which the temple stood, called the "priest's court," or "the Holy Place;"—the outer one being for the general assembly of the people: this latter court was called "the court of the Jews." The priest's court was surrounded by apartments or houses, some of which were for the lodging of the priests, and others for the preservation of instruments used in sacrifice, &c. In the *second* temple,—that which was standing while Christ was upon earth,—the court of the Jews was surrounded by another court, called "the court of the Gentiles," which was the part of the temple where heathens were permitted to worship the One True God, and from whence Christ ejected the buyers and sellers:—Matt. xxi. 12, &c.

The exterior walls of the temple were of stone, ornamented with the "figures of cherubim and palm trees and open flowers." The roof was covered with plates of gold, and the interior was decorated in the richest manner. It was the custom at that period with all civilized people, to ornament their temples with gold and precious stones; and the Hebrews seem to have exceeded all other nations in this respect. It is worthy of remark, that the two pillars, Jachin and Boaz, erected by Solomon, correspond very nearly in their dimensions with those of the Doric order first invented by the Greeks, and which originally came from their colonies settled in Asia Minor. The height of Solomon's pillars without the chapiter was eighteen cubits*; that of the chapiter itself was five cubits; the circumference was twelve cubits; from whence we may reckon the diameter to have been four cubits. Had they been a single cubit higher, they would have been precisely of the same height with columns of the original Doric order.

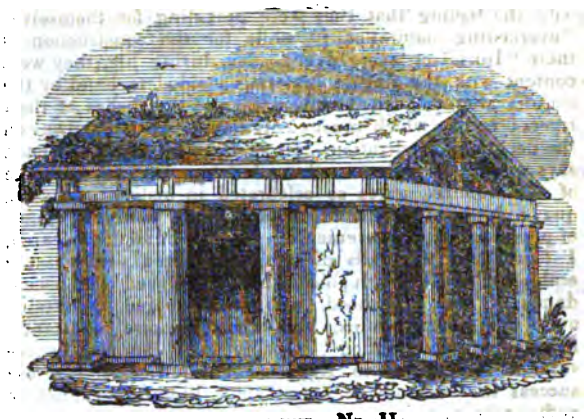
Chinese architecture is referred for its origin to the tents so much in use among a pastoral people. Its prevailing style "must be familiar," as Mr. Elmes has observed, "to every one who has drank from a China tea-cup, or who has seen many of the signs of grocers' shops." Mr. Hope thus in-

* The references to the *Saturday Magazine*, spoken of in the text, are as follows:
The Pyramids, Vol. I., p. 137.
Caverns, Temples, and Tombs of Egypt and India, Vol. II., p. 249.
Temple of Elephanta, Vol. II., p. 162.
Hindoo Idols, Vol. III., p. 188.
Egyptian Antiquities, Vol. IV., p. 153, 185.
Egyptian and Hindoo Columns, Vol. VI., p. 93.
Thebes, Vol. VIII., p. 42, 82.
Catacombs of Alexandria, Vol. XIV., p. 241.

* The Jewish cubit was about 1ft. 9 in. in length.



GRECIAN HUT. No. I



GRECIAN HUT. No. II.

geniously compares a Chinese structure with its original type,—the tent. "In the wooden pillars, destitute of marked bases and capitals, which support the ceilings in such numbers, we see the poles; in the roofs which from these pillars project so far, convex alike in their spine, their sides, and ribs, the awning of hides or pliant stuffs spread over ropes and bamboos; in the curling spikes that fringe their eaves, the hooks and fastenings; in the lowness, spread, and clustering of the different parts, the whole form and appearance and character belonging ro the residences of the herdsmen their ancestors. Chinese houses seem to cling to posts, which when planted in the ground, have struck root and become fixed. The palaces only look like a number of collected awnings, and the very pagodas or towers in their loftiness are nothing more than a number of tents piled on the top, instead of standing by the side of each other. The aggregated dwellings, from the smallest village to imperial Pekin itself, in their distribution, resemble nothing but a camp; and when Lord Macartney, after crossing the whole of the Chinese empire, from south to north, —from Canton to the great wall, its furthest length— was, on the borders of Tartary, received by the Emperor in a real tent, he scarcely perceived any difference to exist between it and the millions of stationary buildings he had viewed.

"Even that other swarm from the Tartar hive," continues the same accomplished writer, "which in a wholly opposite and westward direction, by degrees penetrated to, and under the name of Turks, overwhelmed the Greek empire, distant as are its dominions, separated by the whole width of Asia from those of the Chinese monarch, enables us to retrace, in its stationary dwellings, the form of the portable tent of its nomadic ancestors. I speak not of the mosques, the caravanserais, the baths, and other public buildings, which they possessed not in their primitive roving state, and which, when they became fixed, were designed for them by the Greeks, their new subjects, after their own fashion, and surmounted by the Byzantine dome or cupola. I allude to the private habitation. This latter, from the tent-roof of the meanest cottage, to the porch of the grandest kioschk or palace, in its low spreading expanse, its widely extending eaves, broken at various angles, and supported by numerous pillars, and almost reaching to the ground, still strikingly recalls the same model, and differs little in shape and distribution from the real imperial tent, which, on the breaking ut of every new war, is solemnly erected in the plains of Daoud Pacha."

3. GRECIAN ARCHITECTURE.

We come now to notice a style of architecture which, in elegance, simplicity, and grandeur, stands unrivalled, and has so continued during more than two thousand years; the existing remains of which continue to form the admiration and the study of every architect who desires to form his taste from the contemplation of a perfect model. We of course allude to the GRECIAN style, which is generally said to owe its origin to the Egyptian. Considerable doubt, however, exists on this point; for, besides the elements of buildings which are common to all, certain faint resemblances in ornamental details are not in themselves sufficient to establish a dependence of one style upon another. But however this may be, it is certain that if the Grecian style were suggested by the Egyptian, the model was vastly improved upon; so much so, that scarcely any features of the original remain in the copy to indicate its origin.

History or tradition informs us that Cadmus first induced the Grecians, 1490 B.C., to build in companies and to surround their houses with defensive walls; and thus originated the cities of this people. Near Argos there still exist the ruins of the walls of Tirynthus, supposed to have been a military post or citadel. Strabo supposes these walls to have been erected at a time prior to that of the Trojan war by some emigrants from Lycra in Asia Minor. Many other similar works were assigned to the Cyclopes, a tribe supposed to have come into Greece from Thrace. These walls are composed of rudely-shaped stones of large size; and passing through the wall is a gallery formed of stones laid in horizontal courses, projecting over each other, so that the sides approach together at the top; thus giving a triangular form to a vertical section of the gallery.

At this early period, when Greece contained only the the scattered elements of a nation: when the people were lawless and exposed to foreign attacks; it was necessary to construct strong places for the security, either of wealth or of persons; or perhaps of both. One of these buildings was early erected, it is said, by Minyas, King of Bœotia, at Orchomenos, and is described by Pausanias as a wonderful production. At Mycenæ* there still exists in tolerable preservation a subterranean work, called the "Treasury of Atreus." It consists of two chambers of unequal size. The outer and larger one is of circular form, and is entered by a huge doorway at the end of a large avenue of colossal walls built in nearly parallel courses of rectangular stones roughly hewn, and laid without mortar. As seen from without, the effect is that of an excavation; but internally, it is said to present the appearance of a huge lime-kiln. The walls are formed of circular courses of stone placed horizontally, each course projecting inwards until they meet over the centre. These interior projections have been cut into a smooth surface, which was supposed to have been once covered with plates of metal; bronze attaching nails being found still remaining.

In speaking of Grecian architecture, it is very difficult to proceed in chronological order, because it is uncertain at what time some of the earliest Greek writers flourished, and the inspection of existing ruins does not always suffice to inform us of the date of their erection. There appear to have been few temples before the time of Homer, who flourished about 900 years B.C. This great poet speaks of the temple of Minerva at Athens, of Apollo at Delphi, and of Neptune at Ægæ. He speaks of many sacrifices being performed on altars in the open air; and it is probable, from the language adopted by him, that the *fanes*, or chapels, of Minerva and Apollo were roofless. He describes the palace of King Priam, as being constructed of stone, and consisting of a court surrounded by apartments. Columns are also mentioned by Homer, as forming part of the palace of Ulysses; but no allusion is made to their beauty, and they were probably nothing more than wooden posts. Roofs were probably laid upon dwellings in Homer's time, formed by two or more inclined planes meeting in a ridge or point above; because, in the *Iliad*, the position of two men in wrestling is compared to two beams in the roof of a house. In some cases the roofs were flat; and we read of one of the companions of Ulysses falling from such an one.

But flat roofs to houses were common at times long anterior to the heroes of Homer. The people of Israel were commanded by their Lawgiver (Deut. xxii. 8.) to surround

* Both Argos and Mycenæ were in that part of Greece now called the Morea.

the roofs of their houses by rails, or parapets, to prevent persons falling off. It is likely, therefore, that the houses both in Syria and Egypt were constructed with flat roofs in the time of Moses, as well as at the present day; since in those places the disposition to change has ever been wanting.

We know but little of the state of architecture in Greece, from the time of the Trojan war and of the incidental events referred to by Homer, until the time of the Ionic migration, which includes an interval of about 130 years. We are informed by Vitruvius of a temple, dedicated to Juno, being built at Argos, during the reign of Dorus, son of Helenus, which was probably about 1200 years before the Christian æra; that this temple was built according to certain rules laid down by Dorus himself; and that thus originated the DORIC order, which was afterwards extensively adopted throughout Greece. The proportions of the order were not, however, the subject of any fixed rule, and at the time we speak of, the Grecian buildings must have been very rude.

The arts of civilization received a sudden check on the return of the Heraclidæ to Peloponnesus. This people drove most of the inhabitants from a large portion of the country, and maintained a sanguinary warfare with those who remained; thus for a long time effectually preventing the growth of the arts of peace.

During this perturbed state of affairs, a body of adventurers, commanded by ION, son of Xanthus, colonized that part of Asia which was previously inhabited by the Carians and Leleges. It was then, according to Vitruvius, that the temple of Apollo Panionios was erected by the colonists, in a manner resembling the Doric temples of Greece. These colonists not being in possession of any architectural rules to guide them, and being ignorant of the proportions which the columns should have in order to support the roof, invented a rule, which was to guide, not only themselves, but all subsequent workmen, in order to maintain a sort of harmony among their structures: they conceived the idea of making their columns correspond with the dimensions of the human figure; the average height of which is about six times the breadth. They therefore made the diameter of the column at the lower part equal to one-sixth of its whole length; and the system or order resulting from these proportions, they are said to have named the DORIC, because the *Dorians* were the people who had first adopted it; the name of which people was perhaps a term including all the Greeks who lived at that time north of the Gulf of Corinth. The order was perhaps also called the Doric, to distinguish it from another order, which, according to Vitruvius, was invented or adopted by Ion himself, and hence called the IONIC order.

It is stated by Vitruvius, that the proportions of the Ionic order were derived from the female form, which is more slender than that of the male. The height of the columns was increased to eight diameters; thus rendering their appearance more light and slender, and representing rather the delicacy of the female form than the robustness of the male. The ornamental parts of the Ionic column were, Vitruvius says, suggested by different parts of a woman's dress. The mouldings of the base were intended to represent the shoe; the volutes of the capitol, the tresses of hair curling on either side of the head; and the flutings of the shaft the folds of the hanging garment.

According to the same authority, a third order was afterwards invented by a sculptor named Callimachus, who probably flourished about the end of the Peloponnesian war, about 400 years B. C. This order afterwards received the name of the CORINTHIAN; and in order to give more grace and delicacy to the columns, the standard adopted was that of a youthful female form, instead of that of a matron, as in the case of the Ionic. It does not seem to have been determined what part of the whole length was equal to the diameter; the practice of different architects being probably various. The origin of the Corinthian capital has been stated in a very pretty story*. Vitruvius says, that a young woman of Corinth was betrothed, but before her marriage she fell ill and died: after her burial, her nurse collected in a basket the toys which delighted her when alive, placed the basket on her grave, and covered it with a tile. Now it so happened that the basket was placed immediately over an acanthus root, which afterwards grew up round the basket, and curled up from under the angles of the tile. This was observed by Callimachus, and it suggested to him the idea of a new capital for a column: he therefore perpetuated it in marble.

The general form and ornamental details of a Grecian temple have been referred by Vitruvius to the wooden hut, which an infant community in a country abounding in forests would be likely to construct. The comparison of a simple hut with the early edifices of stone, will show the general correspondence which exists between their members, and will set the reputed origin of Grecian architecture in a clearer light.

The first step towards the construction of a hut would doubtless be, the placing of a number of posts vertically in the ground, which should enclose a space in the form of a square or parallelogram: let these be compared with the columns of a stone edifice. On the tops of these posts would be laid a horizontal beam along each of the four sides, corresponding to which we see the *epistylium*, or *architrave*. Over these would be placed other horizontal beams, parallel to one of the sides of the building, in order to support the roof. These being placed at equal distances from each other, and their extremities appearing over the face of the architrave were also afterwards represented in stone by rectangular divisions called *triglyphs*. Smaller beams might yet have been required for the support of the planks, or whatever formed the bed of the roof; and these also are copied, and their projecting ends called *modillions*, while the extremities of another upper course are called *dentils*. Now as a flat covering would not be the best form of roof, in a country subject to heavy rain or snow, an inclining roof supported by beams, placed obliquely along the vertical posts, would soon be adopted in place of the flat one. The temples of Greece and Rome, which were generally rectangular and surrounded by columns, were also frequently covered by roofs inclining on both sides from a ridge over the middle of the building, and parallel to its length. The modillions and dentils with the beams on which they appear to rest, and the part of the roof above them, form the *cornice*. The whole system of horizontal beams, comprehending architrave, triglyphs, and the spaces between them called *metopes*, (which together have the name of *frieze*,) and cornice, is called by the general name of *entablature*. The inclining roof was formed of rafters or *cantherii* disposed in two planes, declining each way from the *columen*, or ridge, of the roof; the upper ends of the rafters were attached to this ridge, and the lower ends rested upon the entablature. Over these rafters were placed, in horizontal positions, small timbers, called at present *purlines*, (formerly *templa*,) parallel to the ridge of the roof; and over these again was another tier of rafters projecting beyond the architrave or frieze of the sides of the building, and supporting the tiles, or other covering of the roof. The roof of a building thus formed of two inclined planes, was called by the ancients *fastigium*. The triangular extremity is called the *pediment*, and the space within the cornice of this pediment is named the *tympanum*.

Having thus described the general points in which a simple hut and a Grecian temple resembled each other, we now descend to some of the minuter ornaments of the temple, in order to ascertain how far we may suppose these also to have taken their rise from the same source. If then trunks of trees are found to have given the idea of the columns which supported the edifice, from whence was derived the *plinth* or chief part of the base of the column? In the wooden hut, the main supports, if resting exclusively on the ground, would be liable to sink beneath the surface, and to fall into a state of decay owing to the effects of a humid soil. There would be perhaps an effort made to prevent these evils, by placing a tile or flat stone underneath the post, to prevent it from sinking; and the bottom of this post being liable to split by the weight above it, there might also have been a band surrounding it; from which the idea of the ornaments above the plinth were derived; so that, altogether, the base of the columns in the wooden hut might have afforded a model for imitation in the base of those of a more substantial edifice. We have already stated the conjectures which have been formed as to the origin of the capitals; but, as in some instances we find columns without bases, and in others we find them without capitals; and as, where they are adorned with both, there is much diversity in the several parts; it is needless to dwell further on the probable origin of either the base or capital, or to attach much importance to so doubtful a subject.

* By referring to *Saturday Magazine*, Vol. V., p. 147, the reader will find a pictorial representation of the origin of the Corinthian capital, together with views of capitals, &c., belonging to the five orders.

The spiral curves, or *volutæ*, which adorned some columns, have been supposed, as before remarked, to be in imitation of the curls of hair on a woman's head; or to extend the conjecture, of the curling leaves of plants, or of the horns of animals slain in sacrifice. The capitals of other columns are adorned with double rows of leaves; and this, as we have said, arose from the casual observation of such foliage growing round a bell-shaped vessel at Corinth. The shaft of a column, when carved into longitudinal furrows, is ascribed to a wish to imitate the folds of a woman's dress; or this fluting is supposed to have been invented as a support or resting-place for spears, as warriors were entering the temple. Lastly, the *triglyphs*, and other members of the entablature, may have been derived from natural circumstances, such as the flowing of rain across the entablature, which furnished the idea of channeling the ends of the beams; and the suspension of drops of water, which might have been imitated in the *guttæ*, or drops.

It is impossible, however, to account for all the mouldings which occur in the columns and entablature of a building, recognised by the terms *torus*, *astragal*, *echinus*, *cavetto*, *cymatia*, and the *bird's beak* moulding. All these mouldings are capable of being much embellished, and accordingly, we find them displaying the sculptor's skill in beautiful imitations of the leaves of various plants, or of the figures of animals.

Since the discovery of the massive temples of Egypt, it has been supposed that the primitive types of those buildings must have been the rudely excavated dwellings of the early inhabitants in the rocks of that country; but on examining their present huts, built of mud and reeds in the form of frusta of Pyramids, which are probably of the same character as those of their ancestors, we are struck by so great a similarity in their construction to those of the temples, as makes us think it more than probable that the latter also took their origin from the simple hut.

It is, however, by no means necessary to look further for a type, whence originated all the details of the splendid temples of ancient Greece. We are disposed to admit the wooden hut as the rude idea of a temple, because natural circumstances are powerful in directing and constraining the proceedings of mankind; but still, we ought to render due respect to the inventive genius of man. An infant community is, in great measure, constrained to make choice of the materials which nature has prepared in the locality of their settlement; and doubtless the forms of houses which they are thus compelled to adopt, must, to a certain extent, influence the style of architecture, should that community afterwards become so far civilized as to build extensively. But one of the direct effects of civilization is to foster intellect, and to afford scope for the display of genius, whose prominent characteristic is invention. Now whether we take the cave, the tent, or the wooden hut, as the origin of any one particular style, we ought rather to allow that the inventive genius of man through successive ages, has exalted the humble model into a master-piece of art, than that recourse should have been had either to the natural circumstances of the vicinity, or to the older structures of some distant country, for the suggestion of prominent features or ornamental details. In the spirit of these remarks a modern writer says, "It must not be understood that this hypothesis [the Vitruvian] alone is capable of guiding an artist in his constructions, or of restraining the excesses of a capricious fancy; since the nature of the building to be raised, and our perceptions of beauty may be, together, sufficient to obtain these ends. In forming a portico, for example, we have to support a roof by means which may leave one or more of the sides open to the air. The roof must, therefore, be borne on columns, and between the breadth and height of these, certain proportions must subsist, which experience would soon determine for the best. The entablature might be, originally, one plain mass of stone; but it would be subsequently found more pleasing to divide its exterior surface horizontally, into two or more parts by projecting mouldings, and to ornament the facing in various ways, which would produce an agreeable play of light and shadow; and lastly, the capitals of the columns may have been, originally, simple blocks broader than the shafts, in order to increase the points of support under the entablature; and these would soon, by the taste of artists, be brought to the graceful forms they have since exhibited."*

* *Encyc. Metropol.*; article, Architecture.

It cannot be wondered at, that so imaginative a people as the Greeks should be in possession of many traditions respecting their architecture. We do not of course presume to decide whether they derived it from Egypt, and improved upon the cumbrous model which that country afforded; or whether, as has been asserted, "the hut of Pelasgus, the last entirely wooden cottage in Arcadia, remained the unvarying model of every subsequent fabric in stone and marble, however stupendous, which arose throughout Greece."

Such, then, according to Vitruvius, is the origin of the orders of architecture among the Greeks. This origin may or may not be true: and we do not lay any particular stress upon it, because Vitruvius is not altogether a safe authority. Without, therefore, attempting to unravel the complicated and contradictory appearances which theory and conjecture have thrown upon the origin of the orders, we may proceed to lay before the reader a statement of their principal characteristics, while at the same time we will not altogether disregard the theories which have been advanced, to account for their introduction.

It will be understood, that an *order*, in architecture, is that proportional disposition of building-materials which is peculiar to itself, and distinguished by two principal features; namely, the ENTABLATURE and the COLUMN. The former consists of the *cornice*, the *frieze*, and the *architrave*; the latter of the *capital*, the *shaft*, and the *base*.

The architrave, or, as the Greeks call it, the *epistyle*, is that part which immediately rests *on the columns*, and is supposed to represent the main beam of the primitive wooden temples.

The *frieze* is the central division, which rests on the architrave, and is usually ornamented. The Romans called it phrygium, which means *phrygian*, or *embroidery-work*; and the Greeks *zophorus*, because they often adorned it with *animals*.

The *cornice*, from the Latin *corona*, is the *upper part*, which supports the roof: it projects considerably beyond the rest, for the purpose of protecting the lower parts. The cornice is subdivided into many parts, which are ornamented according to the style.

The *capital* is the upper part, or crown, of the *column*. On this the architrave rests: it is ornamented in a manner peculiar to the order to which it belongs.

The *shaft* is that part of the column included between the capital and the base. The shaft was often ornamented with vertical channels or flutes, the origin and use of which, as we said before, have been variously stated; some, however, refusing to consider the flutings as forming spear-holders, call it an imitation of the *striated* or indented bark in the wooden pillars of the primitive temple; others, again, state that the idea was borrowed from the Egyptians, whose columns were suggested by bundles of reeds, papyrus stems, date-palms, &c.

The *base* is the lower termination of the column, resting on the flooring, or on a pedestal. It is formed of projecting mouldings, and a plinth, in number and form according to the order. The word *plinth* is from the Greek, and implies a *square tile*.

The proportions of all the parts of an architectural structure are regulated by the lower diameter of the shaft of the column, which is divided into sixty parts, or lines. This is the *module*, or architectural scale.

The *façade*, or front of a building, is its most finished part, and is usually ornamented with a projecting *portico*, surmounted by a *pediment*.

The *pediment* is that part of a portico which rises above its entablature, to cover the end of the roof, the triangular form of which it assumes. A pediment is composed of two parts; viz., the *tympanum* and the *cornice*: the former is the interior area or panel, and is usually devoted to ornament or inscriptions; the latter is the highest part, and is placed last on the building, and *crowns* the whole.

The distance from column to column, or the clear space *between columns*, is called an *intercolumniation*.

Any one particular order may be easily recognised, by attending to a few simple points of difference, which we now proceed to numerate. In the Doric order there is no base or moulding at the bottom of the column: the plain capital consists merely of an *echinus*, or convex moulding, and the *abacus*, or square stone. There is also a *triglyphed*, or three-channeled frieze. The Ionic or Corinthian is recognised by the voluted or the foliaged capital, the chief distinction between these two orders being confined to the capital; since there is no precise difference between the

columns or entablatures of either order, except the modillions, which are certain regularly recurring ornaments, peculiar to the Corinthian. Again, with respect to the shaft: the flutes in the Doric order are broad and shallow, forming sharp ridges on the circumference of the shaft; but, in the other two orders, the flutes are narrower and deeper, and are separated from each other by spaces left between the flutings on the surface of the shaft. With respect to the architrave, the Doric consists of a plain face, surmounted by the *tænia*, or band, to which is attached, beneath each triglyph, another fillet, holding the *guttæ*, or drops; but, in the other two orders, the architraves are generally divided into three faces, projecting somewhat the one above the other, with curved mouldings, plain or ornamented.

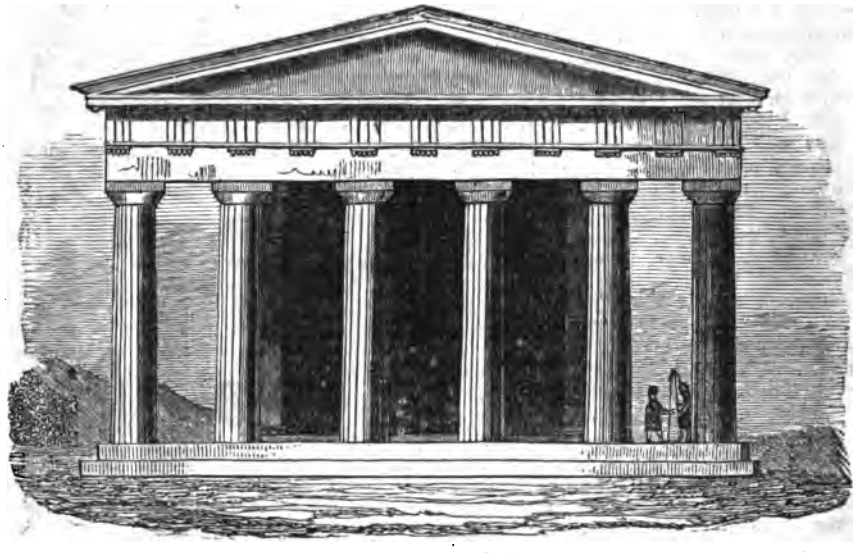
No one can rise from an attentive study of a Grecian Doric temple, without being struck with the masterly degree of skill with which its various parts are combined, so as to produce a grand and effective whole.

In proceeding to lay before the reader a somewhat detailed account of a Doric temple, we need scarcely offer an apology for using a variety of architectural terms, which may at first sight appear new and difficult. The great advantage of technical terms, at all times, is to convey concisely and emphatically to the mind, certain meanings or definitions which have been conventionally decided upon, and which, if attempted to be conveyed in what is called "popular language," would not only involve a description in much circumlocution, but would embarrass the careful reader, rather than assist him. At the same time, we must confess that a clear idea of the details and entire harmony of a fine building, cannot be obtained without a certain degree of fixed attention on the part of the reader. We therefore invite him to bestow this attention, with the assurance that, if he understand the means employed to confer so much simple beauty upon a mere collection of stones, he will find an additional interest imparted to his rambles, by his being able to appreciate the results of an architect's study, and to pronounce with some degree of confidence upon the good or bad taste of any structure which may come under his notice.

Without at a.. attempting to fix a standard of taste, we may offer a few remarks, by way of answer, to the very general questions,—"How am I to know when such a building is in good or bad taste?" "Why should a building be in good or bad taste, according as it does or does not agree with the structures of the ancient Greeks?" The answer to these questions is very simple. It has been admitted by the almost universal voice of men of talent and genius of all nations, who have studied the subject, that the public edifices of the ancient Greeks are perfect in their kind; that their minutest, as well as their grandest parts, are combined with such consummate skill, that any alteration must be a deterioration. This combination was doubtless the result of much study and variation: this perfection of architecture must have occupied many first-rate architectural minds, through a course of ages. In a country, too, where polytheism prevailed; where temples were erected to so many objects of devotion, and the character of each temple was regulated by the properties (so to speak) of its presiding deity; and where public buildings of other kinds than those devoted to public worship, so greatly abounded; all such variety must have given experience to a civilized people bent upon the adornment of their cities. Here also the meanest member of the community felt a zeal and pride in such adornment; thus doubtless making it become matter of competition with architects who should excel: and where the people themselves had the taste to decide upon excellence, we can no longer wonder that the remains of ancient art are now looked upon with reverence, treasured up in our museums, and imitated in our own structures, as the works of our masters in architectural art;—for such they surely were, else why do we copy their productions? and what else is it but a disregard of such perfect models at the present day, that has produced the general authorized opinion, that the modern taste for architecture in England is decidedly bad?

"No art," says Mr. Eustace, "deserves more attention than architecture, because no art is so often called into action, tends so much to the embellishment, or contributes more to the reputation of a country. It ought, therefore, at all events, to occupy some portion of time in a liberal education. Had such a method of instruction as that which is here recommended, been adopted a century ago, the streets of London, Oxford, and Cambridge would not present so many shapeless buildings, raised at an enormous expense, as if designed for eternal monuments of the opulence and of the bad taste of the British nation. We should not see such a multitude of absurd edifices, under the names of temples, ruins, &c., disgrace the scenery of England, so much admired by foreigners. In short, instead of allowing architects to pursue novelty at the expense of taste, and seek for reputation by adaptations and pretended improvements of their own invention, a method which has never yet succeeded, their employers should oblige them to adhere strictly to the ancients, and by adopting their forms and proportions, to adorn England with the noblest edifices of Greece and of Italy."

In our next Supplement on Architecture, we will conclude our details of the Grecian orders, and enter upon the *fourth* era of our history, including Roman Architecture.



TEMPLE OF THESEUS.

LONDON: Published by JOHN WILLIAM PARKER, West Strand; and sold by all Booksellers.

THE

Saturday Magazine.

No. 498. APRIL 4TH, 1840. Price One Penny.

THE TOP OF THE PYRAMID OF CHEOPS.

SKETCHES IN EGYPT, 1839.

A NIGHT ON THE GREAT PYRAMID.

* * * ON the 28th of October I left Sakkarah, a small village on the western bank of the Nile, and followed the track which leads from thence to the Pyramids of Gizeh. In addition to a servant, the party consisted of two donkeys with their boys, and a camel, with its attendant, or *seis*. After six hours' donkey-riding, we reached the ledge of sandstone on which the great pyramids are built; the rock itself is excavated into tombs, and forms part of the ancient cemetery of Memphis. Mr. Hill, of Cairo, has enclosed a small promenade adjoining the tombs, and fitted up several of the latter as bed-rooms.

The Arab who was in charge of the place was a bachelor, not of long standing, for he had divorced his wife that morning. We availed ourselves of the tent erected there, and unloaded the camel to prepare for dinner. Some birds which I had just shot soon appeared upon the divan, or, to borrow an expression from the western world, upon the table, and during the interval I visited the pyramid of Cheops, and made arrangements for the proceedings of the night.

The sun was nearly touching the horizon when I left the tent for the second ascent; and on reaching the base of the pyramid, its long pointed shadow might be seen moving across the inundation of the Nile, and rapidly gaining the opposite bank. Then it gradually ascended the mountains beyond, rising like a pyramid of darkness, till a universal shadow effaced its outline. Immediately after we began the ascent.

I had flattered myself that after some experience on the smaller pyramids, I should be able, empty handed, to distance the Arabs who carried our effects. I was, therefore, the more surprised to see the six who were engaged in the service, each loaded with a basket, mattrass, or such piece of furniture, scrambling up the giddy height with astonishing velocity. Scantily dressed as they were, they appeared like some red-legged insects crawling up a wall; and a wall does not look much steeper than these buildings, when one is actually upon them. On reaching the half-way stone, they waited for us to join them, and recommenced the ascent with equal alacrity, and in due time, we all reached the summit of this stupendous mass.

The twilight being short in that country, no time was to be lost in erecting the piece of tent, without which the exposure to the night air would have been highly imprudent. The whole party then sat down to supper, and from the *running* translation of my Italian servant, the conversation appeared to have taken a political turn, not very flattering to his highness Mehemet Ali.

The first incident that threatened our comfort, was the arrival of a swarm of flies, of such intensity, that a candle would certainly have been extinguished by them; but they disappeared with the twilight, as the Arabs had predicted. Then I discovered tarantulas*, eight inches in length, running over the stones; the Arabs assured me, that though they would bite in a house, they would not do so upon a pyramid. With this addition to my knowledge of natural history, I banished all apprehension from this source.

After lighting a *chibouque*, and putting on a dressing gown as a protection from the dew, I lay down on the uneven stones of the summit, so as to see nothing but the sky above. The highest building ever raised by the hands of man was beneath us, and the stars seemed sensibly nearer from the elevation. It was difficult to realize the precise situation which we occupied: apparently,

> Before the starry threshold of Jove's court,

and certainly,

> Above the smoke and stir of that dim spot
> Which men call earth.

Whatever poetical associations arose during the daytime, they were nothing to those which presented themselves during the lingering twilight, on the same spot.

On looking round, the country offered a prospect singular in the extreme. The stagnant inundations on the east were jewelled with reflected stars: the melon fields, and other cultivated tracts, with their fires lighted by the watchers, were mostly to the north; and the Desert completed the panorama to the south and west. In these directions the darkness was unbroken; but gradually a dull purple haze hovered over the sand, almost beautifying the darkness, and at least rendering it visible against the last rays of the western sky.

The Great Bear had set entirely, and the smaller seemed preparing to follow,—Orion had almost emerged from the flood eastward, when I left the rugged stone-work for the more seasonable luxuries of a mattrass and awning. The end of the former, rolled over a gun, served as a pillow, and Morpheus supplied the rest.

There are some situations in which we feel more strongly than in others our entire dependence on divine protection. And since so much of our consciousness of the need of that protection is dependent upon external impressions, should we not do wrong in neglecting the aids which they furnish to devotion?

About three o'clock in the morning the extraordinary appearance of the light coming through the tent induced me to rise and examine its cause; this was interesting enough; thin clouds had been formed by the radiation at night, and had settled upon the top of the pyramid. At times we were enveloped in a luminous fog; at others, the clouds swept up the side of the pile, and I could see the white moonlight shining on the base through the vapour. The appearance was precisely that described by Coleridge,—

> While all the night, through fog-smoke white,
> Glimmered the pale moonshine,

and at times the stars were visible through the gaps in the clouds.

The fog seemed to thicken till day break, but after sunrise it cleared away. Then the prospect assumed a remarkable distinctness, from the moisture of the air, but it was entirely disenchanted; partly, by the want of a variety of light and shadow, but more, I fear, by the uncomfortable sensation of a dull cloudy morning. The Nile was but a stream of muddy water, and the rich plantations mere boggy fields; the palm-trees hung their heads, as if ashamed of the weather; and the heavy dew stained the clear yellow of the desert sands. It was high time to descend, and we descended accordingly.

Before leaving the summit, I was gratified by hearing a novel kind of echo from the neighbouring pyramid of Cephrenes. The troops across the river were exercising artillery, and the report of each gun was mingled with its echoes into a prolonged murmur: this sound, on reaching the pyramid, was reflected from the facing of each stone opposite; and being thus, as it were, decomposed, produced the effect of a rolling fire of musquetry. On discharging a fowling-piece, the same sound was produced.

* The animal which receives this name in Egypt is somewhat like a fat lizard, but quite distinct from the cameleon.

The entrance to the pyramid has been so often described, and offers so little worthy of notice; that it is not worth the repetition in this place. I was more interested in observing a gutter or gully on the east side, which I have not found noticed in any work. It seems formed by rolling down the stones taken from the summit, which were probably used in the building of Cairo.

In addition to the pyramids of Cheops, and his brother Cephrenes, there is a third built by Mycerinus, the son of the latter, and a still smaller one, attributed to the daughter of Cheops. On discharging a gun alongside of this pyramid, a sharp echo was produced from it; then Cheops returned a hoarse growl, like the sound of thunder among mountains; and Cephrenes from the greatest distance, "murmured soft applause."

When a gun is discharged opposite a pyramid the echo appears to rise and fall: the swelling of the sound arises from the fact, that the stones in the centre of the base first returned an echo; and the gradual subsidence is accounted for by the tapering of the summit, which returns the latest sound.

The sphynx is becoming so defaced that the features convey but little expression. I was disappointed in its appearance, though on standing beside it its prodigious size became evident. After breakfasting at the tent, we loaded the camel and returned across the inundation to Cairo.

The accompanying print is from a sketch made on the top of the pyramid of Cheops, at the setting of the moon. The larger of the two other pyramids seen in this view is that of Cephrenes, and the smaller that of Mycerinus*.

* See also *Saturday Magazine*, Vol. I., 137, 196; Vol. II., 249; Vol. III., 153, 183; Vol. VIII., 41, 81; Vol. XIV., 241.

THE LAST HOURS OF SOCRATES.

Socrates, the son of a humble statuary of Attica, was born about 467 years before Christ. He gained the highest reputation among his countrymen for wisdom; Xenophon and Plato having considered themselves most fortunate in being his pupils. He devoted the early part of his life to the study of philosophy, and to the introduction of a purer system of morals than had prevailed amongst his countrymen. Having, however, through the fame and honour which he had acquired, excited the jealousy of many persons, to whom the respect and reverence paid to his character were displeasing, he was at length, when upwards of seventy years of age, accused by them of endeavouring to subvert the customs and institutions of his country, and thrown into prison. Through the partiality of his judges, and his own firm and unyielding conduct at his trial, he was condemned to death. He submitted to his sentence with patience, and refused, at the instigation of his friends, to escape from prison, or by a disavowal of his sentiments to avert his fate. This was delayed thirty days, in consequence of the annual rites paid by the Athenians to Apollo, in his temple at the island of Delos. On the return of the deputation from Delos, amidst the usual display of public rejoicings, the respite allowed to the injured philosopher ceased, and the poison was administered. He was visited in prison during this interval by his pupils and friends, to whom he imparted lessons of wisdom,—the best which that age of the world could supply.

For Athens bound, from Delos' sacred shore,
An ancient bark its living treasure bore;—
Th' Athenian band, whose laureled brows proclaim
The annual honours paid to Phœbus' name.
Returned at length, their awful persons meet
Homage and thanks in every joyous street.
Amidst the general welcome, there are those
On whose sad hearts the festal day bestows
Pain, pain alone; for ere its moments fly,
The captive Sage, their friend and guide, must die.
But while he waits th' inevitable doom,—
His passage from the prison to the tomb,—
Illustrious hearers seek his dungeon-shades,
As once the Porch, or Academus' glades.
Then, Socrates, thy varied wisdom's store,
Like the crushed flower, more fragrant than before,
Dispensed its power and sweetness from thy tongue,
Whilst sorrowing friends on every accent hung.
First he forgave each slanderer's private feud,
His fickle country's deep ingratitude,
And, loving her, resolved with smiles to wait
The bowl which she administered in hate.
Though worn in body, yet with mind unbent,
He spoke of states, their laws and government,
Discoursed of morals, traced the springs of thought,
In lines more clear than ever heathen taught;
The nicely-varying provinces assigned,
Respective claims of matter and of mind,
One bound to earth, the other soaring high
To unknown regions of eternity,
And privileged by partial fate to dwell
In amaranthine bowers, and fields of asphodel.
Well might the lands, with light and truth unbless'd,
Deem of the sage, that at his high behest,
Ethereal Wisdom left the realms of day
To hold kind converse with the sons of clay.
Yet though he marked with fixed and anxious eye,
Her golden chain descending from the sky,
And reaching earth, yet nought *beyond* she gave;
The brightest links were hidden in the grave.
Struck with the aching void, the stinted view,
He owned with sorrow that he nothing knew;
With powers at fault, in doubt and error's shade,
His Reason asked for Revelation's aid—
But asked in vain. "The fulness of the time"
Had not arrived! the glorious morning prime,
Which chased away the dimness and the night,
Had scarcely dawned; there was no Gospel light!
O had his ears but heard, or heart believed
The truths by shepherd and by sage received,
Facts, which, unspoiled by philosophic rules,
Lighten and cheer our cottages and schools—
"To you this day"—thus spake the heavenly word—
"*Is* born a Saviour which is Christ the Lord!"
And that which saints in perfect peace hath kept;
"The Lord is risen!" "the first of them that slept;"
God's power and love th' enraptured Sage had known,
And cast *his* wisdom's crown before the Throne;
Pressed to his heart the Book in mercy given,
And raised his eyes with thankfulness to heaven.—M.

The desire of power may exist in many, but its gratification is limited to a few;—he who fails may become a discontented misanthrope; and he who succeeds may be a scourge to his species. The desire of superiority or of praise may be misdirected in the same manner, leading to insolent triumph on the one hand and envy on the other. Even the thirst for knowledge may be abused, and many are placed in circumstances in which it cannot be gratified. But the desire of moral improvement commends itself to every class of society, and its object is attainable by all. In proportion to its intensity and its steadiness, it tends to make the possessor both a happier and a better man, and to render him the instrument of diffusing happiness and usefulness to all who come within the reach of his influence. If he be in a superior station, these results will be felt more extensively; if he be in a humble sphere, they may be more limited, but their tendency is equally to elevate the character of man.—Abercrombie.

This Book, this Holy Book, on every line,
Marked with the seal of high divinity;
On every leaf bedewed with drops of love
Divine, and with the eternal heraldry
And signature of God Almighty stamped,
From first to last, this ray of sacred light,
This lamp from off the everlasting throne,
Mercy brought down, and in the night of Time
Stands casting on the dark her gracious bow;
And, evermore beseeching men, with tears
And earnest sighs, to read, believe, and live.—Pollok.

Time *was* is past: thou canst not it recall;
Time *is* thou hast: employ the portion small;
Time *future* is not and may never be;
Time *present* is the only time for thee.

THE NATURAL HISTORY OF THE MONTHS.

IV. APRIL.

> Next came fresh April, full of lustyhed
> And wanton as a kid whose horn new buds;
> Upon a bull he rode, the same which led
> Europa floating through th' Argolick fluds:
> His horns were gilden all with golden studs,
> And garnished with garlands goodly dight
> Of all the fairest flowers and freshest buds
> Which th' earth brings forth.—SPENSER.

THE character of this month has ever been that of fickleness: it has its soft balmy days, when the brightness of the sunshine is tempered by a dewy mist that sweetly blends earth and sky, and adds new beauty to the tender green of the one, and the celestial blue of the other; but it has also its days of wintry rigour, and of chilling showers, which appear doubly unpleasant by the contrast. Amidst these alternations of weather vegetation advances, and the bursting of buds and opening of flowers fully establish for this month its right to the name of April, a term derived from the Latin verb *aperire*, to open.

In the early part of the month, the Swallow, that welcome harbinger of Spring, revisits this country. In Britain there are four species of swallows which arrive in the following order. 1. The Chimney Swallow, which builds in chimneys and is remarkable for its twittering note, its long forked tail, and the reddish plumage which adorns its breast. 2. The Window Swallow, or Martin, which builds its nest under the eaves of a house, leaving a small aperture on one side for an entrance, and which may be known at once from the Chimney Swallow, from having the under part of the body of a clear white. 3. The Sand Martin which frequents the sandy banks of rivers, where it scoops out holes to the depth of two feet, in which to deposit its eggs. This is the smallest of our swallows, and is called in Spain the *mountain butterfly*. 4. The Swift, which arrives later and departs sooner than any of the tribe, and is known by its large size and rapid flight. Sir Humphrey Davy, in his *Salmonia*, thus p'easingly describes the Swallow tribe:—

> The Swallow is one of my favourite birds, and a rival of the Nightingale; for he glads my sense of seeing, as much as any other does my sense of hearing. He is the joyous prophet of the year—the harbinger of the best season: he lives a life of enjoyment amongst the loveliest forms of nature: Winter is unknown to him; and he leaves the green meadows of England in Autumn, for the myrtle and orange groves of Italy and the palms of Africa:—he has always objects of pursuit, and his success is secure. Even the beings selected for his prey are poetical, beautiful, and transient. The ephemeræ are saved by his means from a slow and lingering death in the evening, and killed in a moment, when they have known nothing of life, but pleasure. He is the constant destroyer of insects,—the friend of man; and with the stork and the ibis, may be regarded as a sacred bird. The instinct which gives him his appointed seasons, and which teaches him always when and where to move, may be regarded as flowing from a Divine Source; and he belongs to the Oracles of Nature, which speak the awful and intelligible language of a present Deity.

Towards the end of the month, the Cuckoo's monotonous note is welcomed; the voice of the Nightingale is occasionally heard, and other warblers begin to pour forth their eloquent lays. The Blackcap utters his plaintive inward song, the Red-start pipes merrily from the topmost bough of some favourite tree, the Grasshopper-Lark runs whispering along the hedges, and the Thrush peals out his continuous melody day after day, with unwearied energy. Insects too are stirring: the mole cricket's jarring note is heard from his subterraneous abode; dragon flies emerge from the water; the horse-ant begins its annual labours and erects its conical nest; and the hum of bees is often heard.

The fields and meadows are every day becoming more lovely. A faint tinge of delicate green at first appears, and, gradually changing and brightening, it at length grows into the fresh and lively hue of Spring. This universal clothing of green, enamelled as it is with the scattered flowers of the early season, presents a most delightful change to the eye, long accustomed to the leafless shoots of the preceding months. Nor is this verdant mantle with which the earth is covered the only charm which greets our sense of sight. Many trees come into blossom during the month, and envelope their branches, still destitute of leaves, with fair and slightly fragrant flowers. The almond tree produces its crowded pink blossoms; the plum its snow white, nearly as full and as thickly clustered as the almond; the blossoms of the peach and nectarine are unlike either of the former and less abundant, but still very beautiful and of a rich colour; but most profuse of all, the cherry, laden in every branch with its white blossoms so that not a leaf or stem is visible, except where three or four leaves appear at the extremity of each branch. These form a most agreeable spectacle not only on account of their beauty, but for the promise they hold out to us of an abundant supply of fruit. But before any of these appear, the blackthorn or sloe has whitened the hedgerows with its abundant blossoms, and has reminded us of the later and more lovely May-blossom. Those who are best acquainted with the usual course of the seasons, and have acquired by long experience some sort of right to prognosticate concerning the weather, teach us always to expect a recurrence of cold weather during the time that the sloe is in flower, and to look out for what they term the "blackthorn winter." The return of frosty nights and cold winds, at this season, is often fatal to the young fruit, and destroys the fair prospect which an early show of blossoms had created.

Besides the flowers of last month we have now, if the weather be favourable, a number of additional ones. Lady-smocks "all silver white," lilies of the valley, jonquils, wood-crowfoot, marsh-marigold, wood-anemone, cowslip, alysson, wall-flower, auricula, yellow tulip, moth-mullein, saxifrage, &c.

Some of the early flowers are now fading away; the daffodil, which had presented its straw-coloured blossoms early in March, is no longer to be seen. Thus does Herrick lament its doom:—

> Fair daffodils, we weep to see
> You haste away so soon:
> As yet the early rising sun
> Has not attained his noon:
> Stay, stay,
> Until the hastening day
> Has run
> But to the even-song:
> And having prayed together, we
> Will go with you along!
>
> We have short time to stay, as you;
> We have as short a Spring,
> As quick a growth to meet decay
> As you, or any thing:
> We die
> As your hours do; and dry
> Away
> Like to the Summer's rain,
> Or the pearls of morning dew,
> Ne'er to be found again.

In our warm shrubberies, lilacs, and laurustinuses, the barberry, the double-flowering cherry, the hypericum, the privet, and laburnum or gold-chain, begin to exhibit their blossoms. The elm and the beech are now in flower, and the larch is in leaf, displaying the most delicate and beautiful hue of green which is perhaps to be found in this season of beauty. The

horse-chesnut opens its broad palmated leaves very early, and soon presents a show of handsome blossoms, of a delicate white, tinged and beautifully marked with pink.

The cheerfulness and joyousness, now visible throughout animated nature, is refreshing and delightful. Earth, air, and water teem with multitudes of beings, rising from their winter's torpor, or vacating their secure retreats. The life and animation displayed by the lower animals communicates itself to man. He is cheered by the caroling of the lark, the frisking of the lambs, and the rapid evolutions of the insect and feathered tribes, and while pleased at the sight of animals enjoying life, he "feels their happiness augment his own," and bursts into involuntary expressions of gladness and admiration.

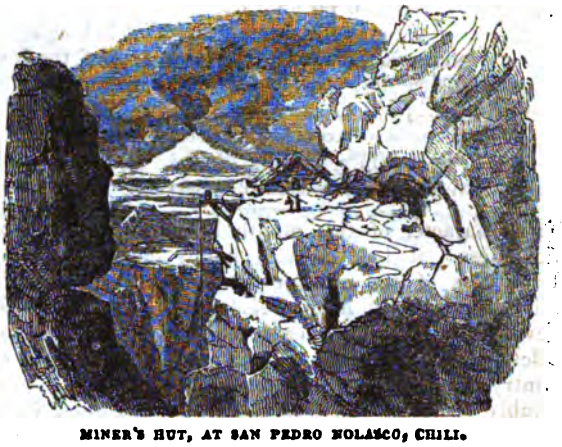
The heat of the weather rises on an average about six degrees during this month, notwithstanding the recurrence of frosty nights at intervals. There is generally sufficient rain to forward the young crops sown in February and March, but when the weather permits, different sorts of grain and seed continue to be sown for fodder. In the garden, the first-sown peas should be flat hoed and furnished with sticking, and if the weather be dry, the seed beds will require to be occasionally watered. Brocoli, kale, Brussels sprouts, savoys for winter use, as well as a succession of salads, &c., are now to be sown; potatoes and kidney-beans planted; and sweet herbs divided and planted out. The fruit trees are attentively examined, and insects, which have been hatched from eggs firmly glued to the tree, are now destroyed by hand-picking. Much injury is sometimes done to the young trees by tribes of sparrows, who alight on them in search of the insects which at this season are abundantly developed, but in their search after these insects they frequently tear off, and sometimes use as food, the tender buds of the trees. Mr. Bewick has the following interesting remarks respecting these birds:—

Most of the smaller birds are supported, especially when young, by a profusion of caterpillars, small worms, and insects; on these they feed, and thus they contribute to preserve the vegetable world from destruction. This is contrary to the commonly received opinion, that birds, particularly *sparrows*, do much mischief in destroying the labours of the husbandman. It has been observed that a single pair of sparrows, during the time they are feeding their young, will destroy about *four thousand caterpillars* weekly! They likewise feed their young with butterflies and other winged insects, each of which, if not destroyed in this manner, would be productive of several hundred caterpillars. Let us not condemn a whole species of animals, because in some instances we have found them troublesome or inconvenient. Of this we are sufficiently sensible; but the uses to which they are subservient in the grand economical distribution of nature, we cannot so easily ascertain. The great table of nature is spread alike to all, and is amply stored with everything necessary for the support of the various families of the earth: it is owing to the superior intelligence and industry of man that he is enabled to appropriate so large a portion of the best gifts of Providence for his own subsistence and comfort; let him not then think it waste that, in some instances, creatures inferior to him in rank are permitted to partake with him, nor let him grudge them their scanty pittance; but considering them only as the tasters of his full meal, let him endeavour to imitate their cheerfulness, and lift up his heart in grateful effusions to *Him* "who filleth all things living with plenteousness."

There is much benevolence in these remarks, and we would willingly join in recommending sparrows universally to mercy, but from their habit of tearing off the young buds of the trees in search of their prey, it cannot always be exercised*.

* See also *Saturday Magazine*, Vol. II., pp. 92, 101, 111, 120.

THE MINES OF CHILI, IN SOUTH AMERICA.



MINER'S HUT, AT SAN PEDRO NOLASCO, CHILI.

THE mines of South America were the objects of many commercial speculations among English capitalists twelve or fourteen years ago. The circumstance, that very large profits had occasionally been made in those mines, induced moneyed men to embark their capital with but little consideration respecting the difficulties surrounding such undertakings. The mines of Chili are mostly situated in remote parts of the mountains, difficult of access. Fuel and water are scarce; great expense is incurred in transporting the ores to the sea-coast; and the fuel and other necessaries from the sea-coast to the mines: the wages paid to English miners sent out there are high; in case of unforeseen diffiulties it is almost impossible to obtain additional hands for the mines at a short notice; tools, iron, and other materials have often to be sent for from a distance of several hundred miles; the climate is found very unsuitable to hard labour for English miners. These are some of the causes which led to the failure of so many companies and associations formed for the purpose of working South American mines, a few years back. We will not dwell further on the commercial relations of the question; but will present a few details respecting the working of the mines, and the habits of the native miners in Chili.

Chili possesses mines of gold, silver, and copper; the gold mines are few in number, and are worked with much difficulty. The silver mines are found to be more profitable than those of gold; and the copper more profitable than the silver. The openings for a mine are generally made at the sides of hills, vertical shafts being seldom formed. The passages are inclined, and often very devious in their direction, being seldom more than four feet in height and the same in breadth, and sometimes, indeed, still smaller, along which none but the Chilians accustomed to it from early life could convey the ores and utensils. Where the *lodes*, or metallic veins become vertical, the miners ascend and descend by means of rude ladders, formed of poles and sticks tied together by rude hides. Sometimes, from the abundance of ore, these passages expand into chambers; but this is generally a bad omen, as it indicates the further impoverishment of the vein.

The mode of managing the Chilian mines, of late years has been this:—the two principal parties concerned are the *proprietor* and the *habilitador*, the first of whom we may call a manufacturer, and the second a merchant. The *proprietor* is the master miner, and lives on his farm in the immediate neighbourhood of the mine. He attends to the details of working and smelting the ore; and tills his own farm, often drawing from it the supply of vegetables, &c., necessary for the subsistence of his miners. The smelting

house is built on the farm, and the rough ore is brought to the door on mules.

The *habilitador* is the mining capitalist belonging to the concern. He generally resides at one of the sea-ports of Chili, and has the whole management of the commercial part of the undertaking;—ships the precious metals off to other countries;—receives the specie or goods in return for it, &c. It is he, also, who provides the ready money for carrying on the mine, such as the wages of the miners, &c. The miners are divided into pairs, each pair consisting of a *barretero* or principal workman, and an *apiré*, or carrier of the ore, the former receiving ten dollars per month for wages, and the latter six, the two together also receiving food and clothing, valued at twenty-nine dollars per month. The *proprietors* rarely undertake to work a mine with their own unassisted capital; they are seldom, indeed sufficiently wealthy; and when they are so, it is not found in the long run, so advantageous a method as sharing the transaction with an *habilitador*, who takes charge of the commercial part of the business, and advances the requisite capital. Sometimes the owner makes the attempt to work his mines single handed; but he usually fails.

Sir F. Head describes the mode of working in the silver mines of San Pedro Nolasco, about seventy-five miles from Valparaiso:—

At first we descended by an inclined gallery or level, and then clambered down the notched sticks which are used in all the mines of South America as ladders. After descending about two hundred and fifty feet, walking occasionally along levels where the snow and mud were above our ancles, we came to the place where the men were working. It was astonishing to see the strength with which they plied their weighty hammers, and the unremitted exertion with which they worked; and strange as it may appear, we all agreed that we had never seen Englishmen possess such strength, and work so hard. While the *barreteros*, or miners, were working the lode, the *apirés* were carrying the ore upon their backs; and after we had made the necessary observations, and had collected proper specimens, we ascended, with several of these *apirés* above and below us. The fatigue of climbing up the notched sticks was so great that were almost exhausted; while the men behind us (with a long stick in one hand, in the cloven end of which there was a candle) were urging us not to stop them. The leading *apiré* whistled whenever he came to certain spots, and then the whole party rested for a few seconds. It was really very interesting, in looking above and below to see these poor creatures, each lighted by his candle, and climbing up the notched stick with such a load upon his back; though I occasionally was a little afraid lest one of those above me might tumble, in which case we should have preceded him in his fall.

Captain Basil Hall and some friends visited the silver mines of Santa Clara during his stay in Chili. After the party had reached the mouth of the mine, they dismounted and prepared for the descent, by taking off their coats and hats, and providing themselves with candles. As the mine was inclined to the horizon at an angle of about twenty-five degrees, and its roof was at some places not above three feet high, the descent was both difficult and disagreeable. The seam which originally contained the silver had been wrought to a great extent, so that there was left a wide space between two strata of the rock. The surface of the passage was irregular; but so worn by the miner's feet, when bearing their load upwards, and so much polished by their sliding down again, that the party found it no easy matter to avoid slipping at once from the top to the bottom. The guide had excited their curiosity by an account of a lake which, he said lay at the bottom of one of the great workings; but in searching for it he mistook his way, and followed a wrong course, no lake being found. As he was still confident, however, and declared the next attempt would prove successful, a further search was made. After ascending for about a hundred and fifty paces, they went down a second shaft, the inclination of which was so great, as to make this attempt more hazardous than the first. At length, after innumerable windings and turnings, and when nearly exhausted with the heat, they reached a little cave or nook, excavated in the solid rock, with a small lake in the middle of it. The water was intensely salt and acrid; the margin of the lake was fringed with crystals of salt: the roof and sides of the cave sparkled with spangles sublimed from the liquid; and every crevice and cavity in the rock, of which there were great numbers, was lined with nests of crystals of quartz and calcareous spar. The miners were not at work at the time of the visit; but it was evident that no kind of machinery was used in the process: all the ore, when wrought, being carried into the open air on the backs of men. Gunpowder was occasionally used to blast the rock, but everything else was the result of manual labour. In this mine, as frequently happens in mining countries, the depth was approaching to that point when the expense of drawing up and dressing the ore counterbalances the profit to be derived from it, which would soon lead to its being abandoned.

The hard fare, hard labour, and cheerless lives of the Chilian miners, are strikingly told by Sir. F. Head. After a miner had brought up a load of ore from a depth of two hundred and fifty feet, on his back, he laid it on the ground, and Sir Francis endeavoured to lift it: this he could not do; and when two or three of the party had put it on his back, he found he could scarcely stand, much less walk, under the load. The English miner who was with them was one of the strongest of a company of Cornish miners who had gone out from England on a mining expedition; yet he was scarcely able to walk under the load, although it was the same load which one of the Chilian miners had brought up the mine on his back. After this, the party accompanied the miners into a hut at the mouth of the mine; where the latter began to prepare their rude supper. They took their candles out of the cloven sticks, and in the cleft they put a piece of dry beef; this they warmed for a few seconds, over the embers which were burning on the ground, and they then ate it, and afterwards drank some melted snow water out of a cow's horn. Their meal being over, they then enjoyed the only blessing which fortune seemed to have allotted them,—rest. They said nothing to each other, but as they sat upon the sheepskins which formed their only bed, some fixed their eyes upon the embers, while others seemed to ruminate upon other subjects.

The miners are subject to numerous dangers, as well as privations. On one occasion, during a particularly severe winter, as the stock of provisions for the miners' support, which consists principally of hung-beef, was beginning to fail, a party volunteered, in order to save themselves and the rest from starvation, to endeavour to get over the snow to the valley of Maypo, and return if possible with food. They had scarcely left the hut, when a snow-storm, called in that country a *temporale*, came on, and buried them all. The bodies were afterwards found: two had died close together, one was about ten yards off, and one had climbed to the top of a large loose fragment of rock, evidently to look for the hut on the road. Sir F. Head thus speaks of the wild and dreary scene presented by this mine, and the neighbouring country:—

The view from San Pedro Nolasco, taking it altogether is certainly the most dreadful scene which in my life I have ever witnessed; and it seemed so little adapted or intended

for a human residence, that when I commenced my inspection of the *lode*, and of the several mines, I could not help feeling that I was going against nature, and that no sentiment but that of avarice could approve of establishing a number of fellow-creatures in a spot, which was a subject of astonishment to me how it was ever discovered..... A small solitary hut was before us, and we were accosted by two or three wretched looking miners, whose pale countenances and exhausted frames seemed to assimilate with the scene around them. The view from the eminence on which we stood, was magnificent,—it was sublime; but it was at the same time so terrific, that one could hardly help shuddering.

We have, in this paper, confined ourselves principally to a notice of the miners, their modes of life, the nature of the mines, &c.: we must refer the reader to several articles on the subject of "Mining," in the early volumes of the *Saturday Magazine*, for the mode of separating the pure metal from the rough ore, and of preparing it for the manufacturer or the coiner.

Contentment, parent of delight,
So much a stranger to our sight!
Say, goddess! in what happy place
Mortals behold thy blooming face;
Thy gracious auspices impart,
And for thy temple choose my heart!
They, whom thou deignest to inspire,
Thy science learn, to bound desire;
By happy alchemy of mind,
They turn to pleasure all they find;
They both disdain in outward mien
The grave and solemn garb of spleen,
And meretricious arts of dress,
To feign a joy, and hide distress;
Unmov'd, when the rude tempest blows,
Without an opiate they repose;
And, covered by thy shield, defy
The whizzing shafts that round them fly.—Green.

In Civil History, records are consulted, medals examined, and antique inscriptions deciphered, in order to determine the epochs of human revolutions, and verify moral events;—so in Natural History we must search the archives of the world, draw from the bowels of the earth the monuments of former times, collect the fragments, and gather into one body of proofs all the indices of physical changes, which may enable us to retrace the different ages of Nature. It is thus only that we can fix some points in the immensity of space, and mark the progressive stages in the eternal march of Time.—Jameson.

The Insect, that with puny wing
Just shoots along one summer ray,
The flow'ret which the breath of Spring
Wakes into life for half a day,
The smallest mote, the tenderest hair,
All feel our heavenly Father's care.

E'en from the glories of his throne
He bends to view this earthly ball;
Sees all as if that all were one,
Loves one as if that one were all;
Rolls the swift planets in their spheres,
And counts the sinner's lonely tears.—Cunningham.

In the wars of the Guelphs and Ghibellines, the Emperor Conrad, as an offended sovereign, had refused all terms of capitulation to the garrison of Winnisberg; but, as a courteous knight, he permitted the women to depart with such of their precious effects as they themselves could transport. The gates of the town were thrown open, and a long procession of matrons, each bearing a husband, or a father, or brother, on her shoulders, passed in safety through the applauding camp.—Mill's *History of Chivalry*.

Pedantry, in the common acceptation of the word, means an absurd ostentation of learning, and stiffness of phraseology, proceeding from a misguided knowledge of books, and a total ignorance of men.—Mackenzie.

THE FIG-TREE,

(Ficus carica.)

The produce of the Fig-tree, though little esteemed in this country, is valued by the inhabitants of the South of Europe as one of their most delicious fruits, and as an important article of exportation.

This tree belongs to an extensive genus of lofty trees and shrubs, but is the only species of the family which bears edible fruit. The most remarkable circumstance connected with its natural history is the double, and, in some climates, *treble* crop of fruit which it produces in one year, and which doubtless tends to make it so highly esteemed.

Few persons can have overlooked the frequent allusions made to the fig-tree in the prophetic writings: the Old Testament abounds with passages indicative of the value set on it; and the failure of its accustomed produce was evidently regarded by the Jews as a very grievous calamity. To sit "every man under his own fig-tree" was the emblem of peace and security: to be able to rejoice, and to place full confidence in God, "although the fig-tree should not blossom, nor fruit be in the vine," was a mark of strong faith (see Habakkuk, chap. 3., v. 17, 18); and to present an offering of cakes, of figs, &c., was the method taken to appease the wrath of an offended person. (See 1 Samuel chap. 25., v. 18.) The fruit of these prolific trees always precedes the leaves, so that the fig-tree, mentioned in the eleventh chapter of St. Mark's gospel as *having leaves*, might naturally have been expected to present a supply of fruit also.

Among the Greeks the fruit of the fig-tree was highly valued; and that it was regarded rather as a necessary of life than a mere luxury, we may judge from the conduct of the Athenians, who strictly prohibited the exportation of figs from Attica. At Rome, too, we find the fig associated with the vine in the processions in honour of Bacchus, and honoured as the promoter of the strength and vigour of the god. These circumstances imply, that the fig was a valuable and essential part of the support of man in those countries.

In Spain, Italy, and Greece, in the islands of the Mediterranean, and even in the south of France, this fruit ripens so well as to form a valuable article of exportation. The first ripe figs in the East come to maturity about the latter end of June, though some few ripen earlier. The summer fig then begins to be formed, and this is the crop which is dried. In Syria and Barbary there appears a third crop, so that the people are supplied with ripe fruit for a considerable part of the year. The time of gathering summer figs in the Levant, and of drying and packing them for exportation, is one of great bustle and activity.

Nearly a thousand tons of figs are annually imported into Great Britain alone, so that although fresh figs are not much prized among us, the consumption of dried ones proves them to be greatly esteemed. The fruit in its dried state forms a chief part of the support of the inhabitants of Spain, Italy, and Provence, as it does likewise of the inhabitants of the East. In the countries just named it is also a considerable article of commerce. There are many fig gardens in the northern part of France, and there is no doubt but that the tree might be extensively cultivated in this country, in warm situations, were it desirable to do so. But it is evidently not a favourite fruit amongst us; its flavour is deemed insipid, and few persons can eat it with full relish. In many of our old poets mention is made of the "fig of Spain," and a commentator on Shakspeare imagines that

allusion was made to the custom of giving poisoned figs to those who were the objects of Spanish or Italian revenge. And as in Shakspeare we meet with contemptuous expressions, such as "*Figs* for thy friendship," so in vulgar language it is common to say of insignificant things, that we care not *a fig* for them. These expressions may partly arise from the little worth attached to the fig in this country.

We have some old fig-trees remaining in our gardens which produce good crops. They are generally trained against walls. No tree can be more easily increased than this; good trees can be obtained from suckers, which the parent tree sends out in plenty; layers or cuttings also readily take root. Fig-trees will thrive in any good garden soil, but it is said that the best for their production is a strong hazel loam on a dry bottom.

Some years ago it was deemed very injurious to these trees to prune their wood, but experience has proved the contrary to be the case, and that the plan of freeing the tree of its old branches by degrees, as the younger ones come into bearing, is the best for ensuring the crop. The young shoots produced in spring do not ripen fruit, but if these shoots be stopped in their growth, by breaking off their points as soon as they are from four to six inches long, they will throw out other shoots which will bear plentifully, and ripen fruit in the autumn of the ensuing year. Thus by stopping the spring shoots, about midsummer every year, and by keeping the tree clear of old wood, a constant supply of fruit-bearing branches may be depended on.

It is necessary to take precautions during winter, that these trees may not be injured by the frost. Some kind of temporary curtain, which can be let down over the tree and fastened up at pleasure, is better than a permanent covering, which must remain the whole winter. Woollen netting is sometimes employed for the purpose, but we oftener find branches of yew, spruce-fir, &c., stuck among the branches of the tree when it is trained to the wall. In some parts of the continent where the winters are cold, though the heat is sufficient in summer to ripen standard fig-trees, the branches of the trees are bent down to the ground in winter, and covered with leaves which protect them from the severity of the frosts.

By the proper management of these trees in hot houses built for the purpose, a succession of fruit may be obtained all the year round, and the quality and quantity of the same may be very nearly assimilated to that of the fruit obtained in countries the most favourable to its growth.

Two ancient fig-trees still exist in the garden of Lambeth palace, which are said to have been the first brought into England. They were introduced from Italy by Cardinal Pole in 1525, and during their long existence they have attained a size exceeding that of the standard fig-tree in its native situations. They cover a space of fifty feet in height, and forty in breadth, and measure round the trunk, the one twenty-eight, the other twenty-one inches. During the severe winter of 1813-14, these fine old trees received so much injury, that it was found necessary to cut down the principal stems nearly to the ground; they have sent out vigorous shoots since that time, so that the vegetative powers of the roots remain as yet undiminished*.

A celebrated fig-tree, called the "Pococke Fig-tree," was for a long time supposed to be the first of the white Marseilles kind introduced into England. It is said that Dr. Pococke, the celebrated traveller, brought it from Aleppo in the year 1648, when it was planted in the garden of the Regius Professor of Hebrew at Christ Church, Oxford. A history of this tree was read before the Horticultural Society, in 1819, at which time the trunk itself had decayed, but the branches, as in the case of those at Lambeth, were strong and flourishing.

Another celebrated tree, which was in a healthy state in 1757, but has since been destroyed, stood in the dean's garden, at Winchester, and was carefully protected from rough winds and rain by a framework of wood, in which were windows and a door for the admittance of air and of the rays of the sun. On the stone wall, against which this tree was nailed, were several inscriptions, one of which stated, that in the year 1623 King James the First "tasted the fruit of this tree with great pleasure."

Standard fig-trees appear to have been much more common in former times than at present, but they are still to be seen in considerable numbers along the south-east coast of Sussex. Near Worthing in particular, there is a plantation of these trees, bearing good fruit, called, by the people in the neighbourhood, "The Fig-garden," but nothing of their history can be ascertained.

Before we conclude, we must just observe, that of the same family with this fruitful tree is the remarkable and (among the Hindoos) *sacred* tree, whose extraordinary growth and "pillared shade" form so striking a feature of Oriental scenery,—we mean the Banian-tree, to which we propose to devote a separate article.

ACQUAINT thee, O mortal! acquaint thee with God
And joy, like the sunshine, shall beam on thy road,
And peace, like the dewdrop, shall fall on thy head,
And sleep, like an angel, shall visit thy bed.

Acquaint thee, O mortal! acquaint thee with God:
And He shall be with thee, when fears are abroad;
Thy safeguard in dangers that threaten thy path,
Thy joy in the valley and shadow of death.—KNOX.

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*. For an account of Lambeth Palace, see *Saturday Magazine*, Vol. XV., pp. 1, 25, 41, and 89.

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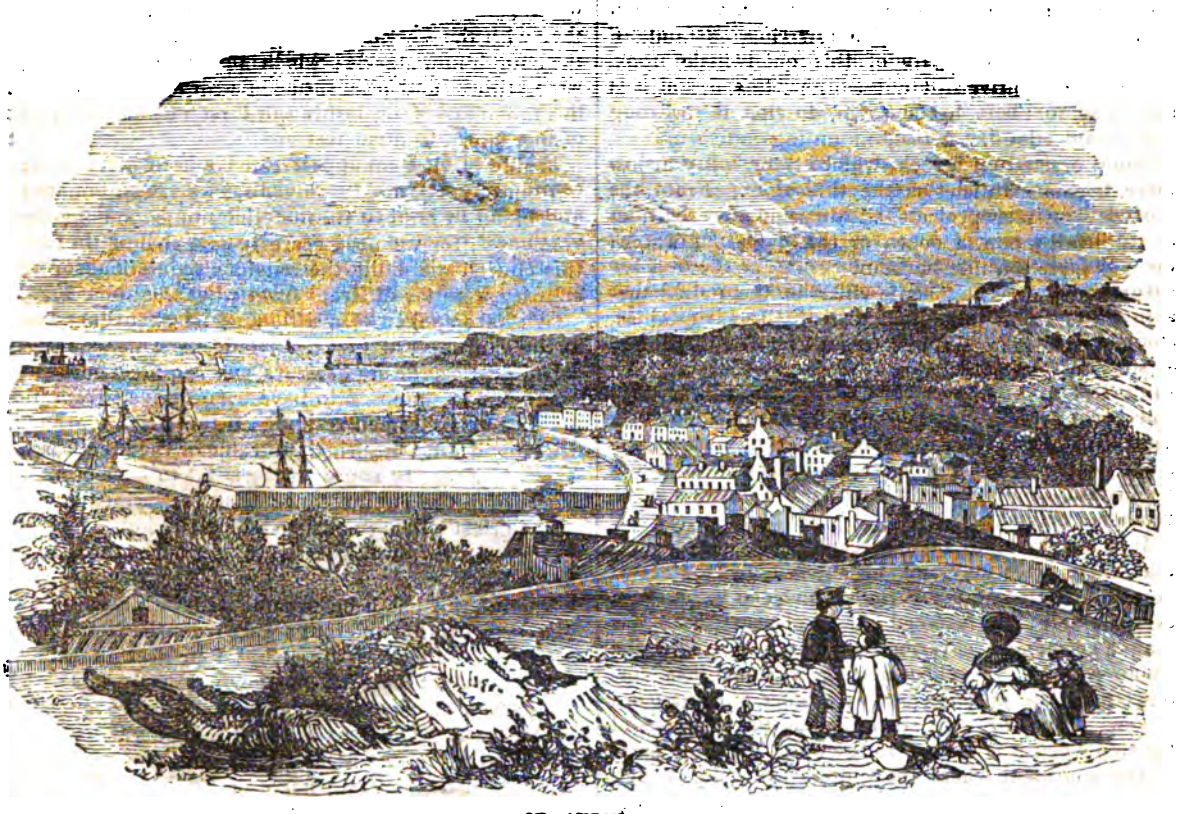
ST. AUBIN AND ITS ENVIRONS, JERSEY.



ST. AUBIN.

Our frontispiece represents St. Aubin, one of the two towns contained in the island of Jersey, the other town being St. Helier. We shall, on the present occasion, confine ourselves chiefly to a description of the first named town and its environs; but we must first speak of the general position and dimensions of the island.

Jersey forms one of the "Channel Islands," the others being Guernsey, Alderney, and Sark. These formerly constituted part of the Duchy of Normandy in France; but they are now included in the county of Hampshire in England. Jersey is situated about six leagues from France, and twenty-three from England. The island is about twelve miles in length from east to west, and from five to seven miles in breadth, containing about sixty-three square miles. The shore contains numerous bays; but there are but few of them accessible to ships, on account of the violence of the eddies existing there. Fortifications are placed at all those parts of the coast at all exposed to the attacks of an enemy; and in time of war these fortifications are provided with a military force, besides a well-disciplined militia. The face of the island is of a hilly character, with rich, well-watered valleys between the ranges of hills. The island slopes towards the south; and though the tops of the hills are almost barren, the soil in the lower parts is very rich and well cultivated. The climate is mild and uniform, frosts being rare in winter, and the air being tempered by sea-breezes in summer. The town of St. Helier is situated on the eastern, and that of St. Aubin on the western side of St. Aubin's Bay.

St. Aubin, though a little town, is a great ornament to the island. The short trip from one town to the other is very delightful: it may be accomplished across the small bay in an open boat, when the tide is high and the wind not westerly; or else by a drive along the carriage-road, running all the way within a hundred yards of high water mark; or, lastly, on the fine hard beach, which is passable at low-water. The drive along the high road Mr. Inglis describes as being very beautiful,—uniting a sea view and a rich landscape; a union rarely met with in England, where open downs and sandy hillocks almost invariably mark the neighbourhood of the sea. During the whole distance between the two towns, (about three miles by sea, and four by land,) the road is bounded by a range of beautiful heights, covered with woods and meadows, and everywhere presenting an appearance of great fertility. On approaching St. Aubin, the road ascends an elevation, on the other side of which the town is situated: the town, in fact, descends from the summit of a little hill to the sea.

"Nothing can be sweeter," says Mr. Inglis, "than the situation of St. Aubin; partly skirting the shore, and partly lying on the rocky, and well-wooded heights, that, from the backs of the houses, drop perpendicularly into the sea; and backed and surrounded

on three sides by a very fertile and yet a picturesque country. To the lover of quiet and seclusion, St. Aubin is just such a place as might be chosen among a thousand." It consists principally of one street, and though not possessing all the bustle of St. Helier, it shares some portion of the foreign trade. Indeed it was once the chief place of trade in the island, and here resided the principal merchants: but, in process of time, St. Helier usurped the principal portion of the commerce; and the population of St. Aubin now consists of those old residents who have still their houses and a little property there; these, with a surgeon, a few shopkeepers, and a few English families, constitute the inhabitants of this quiet little nook. During the summer and autumn, parties are almost daily passing through the town, to visit the western parts of the island. A fort, mounting fourteen guns, has been erected on a rock, which, though dry at low water, becomes an islet as the tide rises. From the fort a strong pier projects, within which there is, at new and full moon, a depth of thirty feet of water; but it is merely a tide harbour.

There are some handsome villas in the neighbourhood of St. Aubin, inhabited mostly by Jersey families, who maintain among themselves a very friendly intercourse.

I have spent, (says the lively writer to whom we have before alluded,) two or three long summer days delightfully in the neighbourhood of this secluded town: the surrounding country is beautiful and diversified; the views over the bay enchanting; sheltered by the high cliffs, there is seldom a rude wind to annoy and distract one: the usual calmness of the sea, too, is in harmony; and after idling away a day among these quiet scenes, we may chance to find a bit of fresh fish, and an indifferent cutlet, at the inn.

The writer says *the* inn, for in truth there is only one; and what may perhaps startle an English reader, there is no church in the town. Let him not, however, draw unfavourable conclusions of the character of the inhabitants from this circumstance, for if there is no church *in* the town, there are two sufficiently near to it for the inhabitants to attend divine service in them. There is, we believe, a chapel or two in the town, belonging to dissenting congregations; but the parish churches of St. Peter and St. Brelade, are situated within walking distance of St. Aubin.

St. Peter's church is situated in a valley of the same name, which is highly picturesque. On one side runs a narrow road at the foot of a rocky range, considerably elevated, and sparingly supplied with verdure. The other side of the valley is bounded by lofty hills, completely clothed with wood. These eminences, as the valley winds, present bold but well-covered projections. The flat part of the valley is divided into meadows, and is marshy. The church of St. Peter is an old building, which has received several enlargements as the population of the island increased. The spire of this church is the highest in Jersey; it was, many years since, injured by lightning, but has since been repaired. On one of the buttresses at the west end are engraved several blacksmith's implements, respecting which singular tablet very little is known. It has been conjectured that it was placed there by some pious smith, who wished to perpetuate either his piety or his ingenuity.

The church of which we have been speaking lies to the north-west of St. Aubin. The other church, St. Brelade's, is to the westward of St. Aubin. This perhaps may be considered the parish church, since St. Aubin is the only town in the parish of St. Brelade. St. Brelade's church is the most ancient in the island: it is said to have been consecrated in the year 1111. The whole building is small and very plain, and boasts neither tower nor spire; and one of the old chapels of the island stands in the church-yard. Over the nave the church is roofed like a house. A sort of round turret rises from the ground; but is built in a nook, and ascends only to a small belfry. There is an altar at the eastern end. Very old buildings have often traditionary tales handed down from age to age, respecting their origin; and St. Brelade's is not without such a feature. The legend goes, that it was intended to be erected on the eastern side of St. Brelade's Bay, (it is now on the western,) but that whenever any materials were collected for the purpose, on the proposed spot, fairies came and carried them away, together with the workmen's utensils, to the place where the church now stands; this being done repeatedly, the superstitious and ignorant people conceived that it was a miraculous interposition, to point out the most proper site. The true interpretation of the story most probably is, that some interested parties were at the bottom of it all, and employed fairies of common flesh and blood to remove the materials, to serve some private ends; for we need scarcely say, that at the time this church was built, the religious regulations of the country were far different from what they now are.

We have spoken of a little ancient chapel standing in the church-yard of St. Brelade's. This chapel is called *La Chapelle des Pêcheurs*, and is quite a curiosity. The name is supposed to have been derived from the number of fishermen residing in the neighbourhood, fish constituting the principal traffic of the inhabitants. Another authority supposes the name to have been derived from the circumstance that the principal part of the priest's living consisted of a tithe on fish. Be this as it may, we proceed to describe the chapel itself.

The interior has been ornamented with a variety of figures, displaying different scenes from the New Testament. These figures are about four feet in height, and painted in colours on the plastered walls; but time, accident, and perhaps wantonness, have nearly effaced them. On the right is still distinguishable an angel, having in one hand a label, on which is an inscription in Gothic characters. He holds this towards a female, whose hands are uplifted in the attitude of praying: behind her is a reading-desk, with a book open, in which are some nearly illegible letters. On the left-hand wall is a man crowned, with an antique sword in his right hand; from his mouth issues a scroll, on which is inscribed

Herod le roy.

His garments are of an olive colour, and over them is a scarlet robe, stretching to the ground. On a lower part of the same wall is a figure of our Saviour, bearing his cross, depicted with yellowish hair, and his head surrounded with a glory. Over the entrance is the figure of a man, robed, with a number of persons around him, some at full length, others just emerging from the ground: this is supposed to represent the resurrection. The figures are tolerably well proportioned, and the colours appear to have withstood the effects of time tolerably well; but the drawing is very slight, and the countenances totally without expression.

The chapel is now, we believe, occupied as an armoury for the parish artillery, so that it is difficult to obtain a view of the whole of the paintings.

Whether these paintings, (says Mr. Plees, in his very accurate account of Jersey,) may be coeval with the chapel itself or not, it appears evident that they existed before the church. Even supposing the chapel not to have been immediately abandoned, after the more spacious edifice was built, still it is very highly improbable that pains should have been taken to decorate a place of worship that was become in a great degree useless, and especially when the new

structure was permitted to remain so unornamented. It is hazarding very little to assert, that it must be, at least, a thousand years since the paintings were executed.

St. Aubin is separated from St. Brelade's church, by a small promontory called the Vintaine de Noirmont, and by the little bay of St. Brelade. This bay is nearly semicircular, bounded on the land-side by high rocky hills. The beach consists of a fine whitish sand, remarkably firm and smooth. Being completely sheltered on three sides, it has been suggested that this little bay would make an excellent place for sea-bathing. This beach is remarkable for being decked with a profusion of small ground roses, which emit a fragrance nearly equal to that of the "rose d'amour."

The southern point of the promontory of Noirmont is guarded by a martello tower, so judiciously placed, that it at once protects the entrance to two bays, those of St. Aubin and of St. Brelade.

So little are we accustomed, in England, to apply the name of a town to such small places as St Aubin, that it may excite surprise when we say that the whole number of houses does not much exceed sixty in the principal street, and about as many more scattered in the neighbourhood. We are not precisely aware of the population in the town itself; but the whole population of the parish of St. Brelade, in which the town is situated, did not amount, in 1806, to more than 814 males, and 960 females, being 277 families in the whole. By the year 1831, there had been a small increase, the males being 953, females 1116, comprising 342 families, pretty equally divided between agriculture, trade, and independence.

THE DECAY OF FLOWERS.

Die, blooming flowers! as if ye ne'er had been;
Die, and relinquish this empurpled scene,
Die, and in due succession, in your stead,
Others shall bloom, and equal fragrance shed:
Like you, bereaved of every living grace,
Like you, in every clime, the human race
Shall perish in succession. "No!" I hear
Reason announce, in accent soft and clear,
Tuned to the warbling of those heavenly strings,
With whose sweet strain the sapphire region rings,
When holy Faith, in pity to mankind,
Reveals the triumphs of th' immortal mind,—
I hear, with mingled music from on high
Reason announce, "Although they seem to die,
"Not like the blossoms of the woody glade,
"Shall the bright flowers of Human Nature fade:
"Adorned with mercy, piety and truth,
"They still shall flourish in immortal youth."
Ye flowers of Human Nature! at the time
We grieve for your decay, in orient prime,
Beneath the brilliancy of heavenly skies,
Ye bloom; whilst here ye seem to fade, ye rise
Gay in th' embellishment of recent hues;
Gales of more exquisite perfume diffuse,
Than ye could breathe amid the mists below;
And gilt with beams of conscious splendour glow.—

RICHARDSON.

A PRINCE who loves and fears religion is a lion, who stoops to the hand that strokes, or to the voice that appeases him. He who fears and hates religion, is like the savage beast that growls and bites the chain, which prevents his flying on the passenger. He who has no religion at all, is that terrible animal, who perceives his liberty only when he tears in pieces, and when he devours.—MONTESQUIEU.

SIR WILLIAM TEMPLE observes that, as to knowledge, the moderns must have more than the ancients, because they have the advantage both of their's and their own; which is commonly illustrated by a dwarf standing upon a giant's shoulders, and therefore seeing more and further than the giant.

APRIL CEREMONIES

OF FORMER DAYS.

VARIOUS have been the customs observed during this month in commemoration of the festival of Easter, but the most universally prevailing ceremony is that of "making fools" on the 1st of April, called from thence *All fools' day*. The origin of this ridiculous amusement is unknown, though the amusement itself is carried on in many of the countries of Europe, and there are traces of it in Asia and America. Among the Hindoos, a festival is held at nearly the same period, called the Huli festival, when the same kind of merriment is indulged in; people are sent on errands and expeditions which end in disappointment, and every one is seeking to raise a laugh at the expense of his neighbour. Colonel Pearce says, that high and low join in it, and that a Musselman of the highest rank was known to be first and foremost in making Huli fools. The joke is carried so far, as to send letters making appointments in the name of persons, who, it is known must be absent from their house at the time fixed upon; and the laugh is always in proportion to the trouble given. This festival is said by some to be of Persian origin, it having been in ancient times the practice to celebrate with festal rites the period of the vernal equinox, which was, at that time, the commencement of the Persian year. Others have found in the general spread of this practice of "making fools," an allusion to the mockery of the Saviour, about this time, by the Jews; which opinion seems not unlikely to be founded in truth, since another custom, called *Lifting*, which is observed soon after this, has evident allusion to the Resurrection.

The 1st of April was formerly observed in Britain as a high and general festival, but has now degenerated into a mere day of amusement for young people, who exercise their fancies in a variety of ways, and when successful in playing off their tricks on their friends and playfellows, greet each of them with the cry, "Ah! you April fool."

In Scotland, the plan usually is, to send a person from place to place by means of a letter, on which is written,

On the first day of April,
Hunt the gowk another mile.

The bearer of the "fool's errand" is there called an *April gowk*, which term is explained by Brand to mean *a cuckoo*, and to be used metaphorically for a fool.

The custom of making April fools prevails all over the Continent. The day is further marked in Provence by every one, whether rich or poor, partaking of a sort of peas peculiar to the country, called *pois chiches*. While the convent of Chartreux was standing, it was one of the great jokes played off on the 1st of April, to send novices thither to ask for these peas, telling them that the fathers were obliged to give them away to every applicant. In consequence of this, so many persons went to demand the promised bounty, that the patience of the monks was at last quite exhausted; and it was well if the vessel carried to receive the peas was not thrown at the head of the bearer.

The April fool among the French is called *poisson d'Avril, i. e.*, mackerel, or silly fish, and their customs are similar to ours. An instance was related in one of the public papers, some years ago, of a Parisian lady carrying the joke too far. She carried off a watch from the house of a friend, which was felt to be so little like a mere act of pleasantry, that she was arrested and taken before the correctional police. Her defence was, that it was an April trick, *un poisson*

d'Avril. She was asked whether the watch was still in her possession. She denied it; but on a messenger being sent to her apartment, the watch was found: on which the young lady declared she had made the messenger *un poisson d'Avril.* The joke, however, did not end so pleasantly, for the lady was recommended to remain in the house of correction, till the 1st of April on the following year, and then be dismissed as *un poisson d'Avril.* In some parts of America, the 1st of April is observed something after the manner of St. Valentine's day, with this difference, that the boys are permitted to chastise the girls either with words or blows.

With regard to the custom of "making April fools," we must express our regret that a sport should continue to be encouraged which involves the practice of deceit and lying. The habit of uttering falsehoods in sport may too readily lead young persons into ingenious methods of concealing their faults by art and dissimulation, and thus prove exceedingly injurious to them, besides being in itself an unjustifiable method of obtaining amusement.

But there are other April ceremonies to which we must advert, and these are principally performed in honour of the festival of Easter. In some parts of England there are still vestiges of a custom which was once prevalent throughout all ranks of society, called *Heaving*, or *Lifting*, on Easter Monday and Tuesday. It was generally performed in the open street, though sometimes submitted to in the house. A chair, decorated with ribbons and favours of different colours, was provided, and the person to be lifted seated in it, when the chair was hoisted three several times from the ground. The person lifted was then expected to present a fee to the lifters, after having received a salute from each of the party. On Easter Monday, between the hours of nine and twelve, the men performed this ceremony towards the women, on Tuesday the women did the same for the men. The form of the ceremony differed in different places: sometimes the person to be lifted was laid horizontally, at others in a sitting position; sometimes a chair was used, at other times the hands of the bearers formed the seat; but, however this might be, the ceremony was incomplete if the person to be lifted was not hoisted from the ground three several times.

There is reason to believe, from an old record of fees paid on the occasion, that Edward the First submitted to this absurd ceremony, and was hoisted in the prescribed manner, by a party of ladies of honour.

The custom of presenting ornamented eggs at Easter has already been alluded to in Vol. XIV., p. 136, of this work; and not only were they considered as offerings of friendship, but chargers filled with eggs having been presented at the church on Easter eve, and duly consecrated, according to the form prescribed in the ritual of Pope Pius the Fifth, a sacred character was imparted to the gift which greatly enhanced its value.

Respecting this custom, (which is prevalent in France at the present day,) we have heard an anecdote related of an honest English traveller, who, unacquainted with the artificial process of colouring these eggs, and seeing many exhibited in the streets of Paris of a deep purple colour, exclaimed with the utmost astonishment, "What colour must their hens be?"

Another custom derived from the Romish church is that of eating tansy pudding at Easter, which is done in remembrance of the bitter herbs used by the Jews in the paschal supper.

There is likewise the Easter ball-play, a Roman Catholic custom, of which it is difficult to trace the origin. In foreign countries, this custom was observed *in the church*, as a part of the service, and is thus described by Fosbroke:—

A ball, not of size to be grasped with one hand only, being given out at Easter, the dean and his representatives began an antiphone, suited to Easter-day; then taking the ball, he commenced a dance to the tune of the antiphone, the others dancing round hand in hand. At intervals, the ball was bandied, or passed to each of the choristers. The organ played according to the dance and sport. The dancing and antiphone being concluded, the choir went to take refreshment.

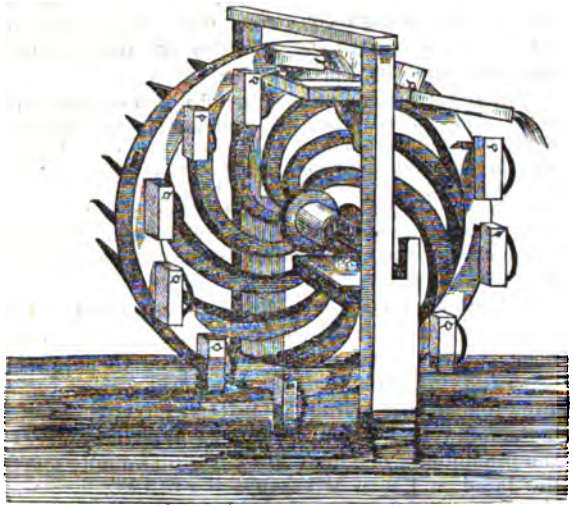
From this strange ceremony are supposed to have been derived several ball-customs in England. It was formerly the practice for corporations to go in full procession at Easter, to some convenient spot, where they joined in playing at ball with many of their townsfolk; and there is a custom in several places of the inhabitants of towns and villages annually playing the game on Easter Monday.

The celebration of the festival of Easter in the churches was accompanied with too many dramatic representations and ceremonies to be more than glanced at here. All the gorgeous display of the Romish church seemed to be brought into requisition on these occasions. Plays, which had for their principal subject the circumstances attending the death and resurrection of Our Saviour, were got up by the ecclesiastics for the amusement of the people. The characters of the piece were all supported by monks, some of whom appeared as angels, others as the women at the sepulchre, and one as Our Lord himself. The machinery, dresses, decorations, and scenery, were often very grand and attractive. We read of "rich canopies of purple velvet, tasseled round about with red silk and gold fringe,"—embroidered cushions of velvet,—"marvellous, lively, and beautiful" images of gold, &c., &c. In Coates's *History of the Town of Reading*, mention is made of several items in the churchwardens' accounts for sums paid for "nails for the sepulchre," "for rosyn to the resurrection play," for the setting up of poles for the scaffold whereon the plays were performed, for making a "Judas," for the writing of the plays themselves, and other expenses attending the getting up of the representation.

The beautiful lights used at the sepulchre-shows, and at Easter, formed a very attractive part of the spectacle. The great Easter taper, or *paschal*, used in Westminster Abbey, weighed three hundred pounds. The paschal in Durham cathedral, where these shows were exhibited with great effect, was square wax, and reached to within a man's length of the roof. An apparatus was constructed for lighting this immense candle, and every taper in the church was purposely extinguished, in order that all might receive from it a fresh supply of consecrated light to be kept up till the next year when a similar parent torch was prepared. A large wax-light, called from its spiral form a *serpent*, was sometimes used on these occasions, and this was lighted by fire struck from a consecrated flint. The expenses attending these exhibitions were frequently much more than paid by the zealous crowds who witnessed the spectacle, and from whom money was collected for the purpose.

Happily for us, Christian worship is now divested of these mummeries; the appeal is no longer made to the imagination, but to the heart and understanding of the people, and with this change in essential things a whole host of follies and superstitious observances has been put to flight.

THE PERSIAN WHEEL.



Among the primitive contrivances for raising water, the *Persian wheel* is deserving of notice, on account of its great simplicity and ingenuity.

This wheel must be of greater diameter than the height to which the water is required to be raised; and it must stand in the stream or reservoir which supplies the water. The machine consists of a wooden circle supported by spokes from a horizontal axis, upon which the wheel revolves in a vertical direction. Upon the rim of this wheel are hung a number of buckets by means of stout pins: these buckets are suspended freely, so as to hang upright as the wheel revolves. As the buckets descend on the right hand side, they become filled, and pass up on the left hand side, when, coming in contact with the fixed trough, they are tilted up, and discharge their contents into the trough; and having passed over it they descend on the opposite side, and are again filled by being brought below the surface of the water. Small springs (shown in the figure by curved black lines,) are fixed to that part of the buckets which strikes against the trough, for the purpose not only of breaking the force of the blows which the buckets would otherwise impart to the trough, but also of raising the buckets above the level of their mouths, and thus enabling them more effectually to discharge their contents. The water is conveyed from the trough by means of pipes, &c., to any required place.

Sometimes this machine is so constructed as to raise water no higher than its axis. In such case, instead of buckets hung upon the wheel, the spokes are of a curved form, as in the figure, and hollow within; each spoke is connected with an opening on the outside of the wheel, and also with openings in a box surrounding the axis: so that, as the wheel dips below the surface of the stream, the water runs into the spoke through the external holes; and as the wheel revolves, the water is discharged into a trough situated a little below the axis, and is thence conveyed to the desired situation.

This machine may be set in action by animal power, when it is erected in stagnant water; or by the water itself, if a running stream be available. For the latter purpose all that is necessary is to equip the circumference of the wheel with vanes or float-boards, when it will raise a portion of the water which serves to drive it round.

This cheap and simple machine is, we believe, almost entirely superseded by the more elaborate contrivances of modern times. We doubt, however, whether any contrivance could be found so cheap, or more effectual on a small scale, for irrigating land for the farmer or the gardener, in cases where the water of a stream is required to be raised to a higher situation. This machine will perform its work without care, attendance, or wages; it never tires; and so long as the stream flows, its motion is incessant: the quantity of water raised by it is not inconsiderable, even with small buckets; and of course the smaller these are, the less force will be required for working the machine. Nor is it a small advantage, that no nicety of construction is necessary for this machine; it will act if only the roughest workmanship be bestowed upon it. It may also be used with great advantage in mill-streams, where water is scarce: by being placed in the *tail-stream* of the water-mill it may raise and return a part of the water to the head of the stream, instead of allowing it all to run to waste.

CHINA. No. XI.

Early Trade with England.—Weakness of the Government.—Opium.—Its Effects on the People.

We have already given a series of papers on the manners and customs of the Chinese*, a popular account of Canton, and the state of trade at that place†, and also some particulars respecting opium and the opium-trade†, borrowed from the pages of the *Dublin University Review*. We now proceed to furnish some additional information illustrative of the national character and government of this singular people, which we have gleaned from a singularly interesting series of *Papers relating to China*, lately laid before Parliament, with reference to the dispute at present existing between this country and China.

THE WEAKNESS OF THE GOVERNMENT.

Lord Napier, late superintendent, relates as follows:—"Two centuries have elapsed, this very year, I think, (he writes in August, 1834), since the bold Captain Waddell came from London, with three or four merchant ships, to propose a trade. The mandarins at first deceived him; but, on a better understanding of his case, he demanded an audience of the viceroy. This was refused, and the batteries opened upon his ships. In this predicament, the gallant Waddell hauled as near the enemy as he could, beat down the walls about their ears, landed and took the forts, embarked the guns, took their admiral a prisoner, sailed up to Canton, renewed his application, and had an audience of the viceroy immediately. This, I believe, is the first instance upon record; and from that time down to the feat of Mr. Innes, last year, success has always attended determination.

"Mr. Innes was insulted and wounded by the people working at a 'chop,' or custom-house, in a manner gross and unjustifiable. He complained to the Hong merchants, (the Hong is a sort of mercantile corporation at Canton, who monopolize all trading transactions with the 'Barbarians,' or foreign dealers,) and could get no redress. He then gave solemn intimation, that if the offender was not in custody by such an hour, to be brought in due course to trial, he would burn the chop-house about their ears. The Hong merchants looked upon this as a mere threat, such as used too often by the Company, (that is, the representatives of the East India Company in London,) and not performed. The hour

* See *Saturday Magazine*, Vols. VII. to XIII.

† *Ibid*, Vols. X., XI., XII.

‡ On Opium—Opium-eaters—the Opium Trade. *Saturday Magazine*, Vol. XV., p. 197.

came, the culprit continued at his work, when Mr. Innes, having taken every precaution to prevent the extension of the flames, projected from his balcony a few blue lights, which very shortly made good his word. What was the consequence? Why, the Hong merchants and mandarins assembled; the culprit was arrested and bambooed through the streets, with his neck and head confined within a pig's yoke."

"You read of a standing army," says Lord N., in a despatch of the 21st of August, 1834, "of above 1,000,000 of men, to defend the empire; it is an absurdity; they could only muster a few hundred wretched creatures last year at this city to send against a rebellion, and one half of them were utterly incapable of taking the field. Governor Le and his troops were defeated, and he was of course superseded by the present man, Loo, who paid an enormous bribe to the rebels, and thus restored order. What can an army of bows and arrows, and pikes, and shields, do against a handful of British veterans? I am sure they would never for a moment dare to show a front. The batteries at the Bogue are contemptible, and not a man to be seen within them. They have, no doubt, a long muster-roll of military; but the governor draws the pay, and if he want a force within the batteries, the plan is to drive in the peasantry from the country around."

Lord Napier's remark about the Bogue and its batteries, at the entrance of the Canton river, is confirmed by the edict of the Governor of Canton, (in November, 1834), issued on the occasion of two English ships of war having passed through these defences, in spite of their fire. We quote the language of the edict itself, which quotes a despatch from the Emperor, containing his reply, "in vermillion," to the report made to his celestial majesty of the occurrence:—"It seems that all the forts have been erected in vain; they cannot beat back two barbarian ships; it is ridiculous, detestable. If the military operations be reduced to such a state as this, it is not surprising that the barbarians regard them slightingly." And then follows a report of the action, in these words, which are quoted from the "Supreme Mandate of the Tribunal of war:"—"This day it is authenticated, that Loo and colleagues have sent a report by post, of the English ships of war having broken into the inner river, and of their having despatched forces to drive them out. On this occasion, the English barbarian eye, (envoy,) Lord Napier, having come to Canton to trade, did not obey the laws, (viz., he should have waited license to come up to Canton from Macao, an island held by the Portuguese, where alone foreigners are allowed to reside permanently). The said barbarian ships of war, two in number, with three hundred and some tens of men, having anchored in the outer seas, the said governor did, during the 6th moon,(July,) forward a communication to the naval Commander-in-chief, Le, for the appointment of a Tsantsang, Kaou-e-yung, to proceed to the maritime entrance, and maintain a preventive guard, &c. But, after all, they were so remiss in keeping up guard, that the said ships of war, on the 5th day of the 8th moon, (7th September), taking advantage of the flood tide, broke in through the maritime entrance; and when the military of the several forts opened a thundering fire on them, the said barbarian ships let off their guns, attacking them in return, and passed on." In consequence of this disgrace, Kaou-e-yung was degraded; Le, because "all the forts, and military in charge of them, could not beat back two barbarian vessels," which "is indeed deserving of most bitter detestation!" was also degraded; and the poor Loo himself, governor of the two Kwang provinces, having caused the disaster, by "want of plans and lack of valour," and "injured the majesty of the nation," was "deprived of his title, of Guardian of the Heir Apparent," and had "his two-eyed peacock's feather plucked out;" but though "degraded from his official standing," says the edict, "let him be temporarily retained in the office of governor of the two Kwang provinces, that bearing his offences upon him, he may direct the arrangement of this affair." "Tremble fearfully hereat. Be attentive hereto. Respect this," are the last words of the imperial despatch.

"The English barbarians," continues the edict in question, and we are afraid with too much justice, "are of a violent and overbearing disposition, and they cherish plans great and deep. This has long been the case. On this occasion the barbarian vessels are only two in number, and the foreign sailors do not exceed three or four hundred men. If, indeed, the passages for advancing and retreating be both cut off, the beast will then be taken,—the fish caught; what difficulty can there be in making a clear sweep in a moment?"

With all their conceit, or, at least, this grandiloquent representation of their own supremacy in all things,—for saith the Governor of Canton, "Even England has its laws; how much more the Celestial Empire! under this whole bright heaven, none dares to disobey them; beneath its shelter are the four seas; subject to its soothing care are the ten thousand kingdoms"—it appears that the Chinese have much respect for the warlike endowments of Britons, in spite of "the soldiers and horses of the Celestial Empire, its thundering forces, with guns and weapons, which gather on the hills;" for "the said barbarians, except in guns and fire-arms, have not one single peculiar talent." And again, "There decidedly must not be the slightest tendency towards what will occasion the commencement of a bloody quarrel, and creation of disturbance."

THE OPIUM TRADE.

It is most clear, from the whole of the correspondence before us, that this trade had long been prohibited; and it was no excuse for carrying it on, that the officers, (mandarins,) whose duty it was to prevent it, had connived at it for the sake of wicked gain. Even Lord Napier's successor, Captain Elliott, confirms this remark in a despatch, in 1836. "It was formerly a prohibited trade, but there was no part of the trade of this country which had the more active support of the local authorities." Most true; it commenced and subsisted with their hearty connivance, and without it could have done neither the one nor the other. The prohibition of 1799 has never been taken off: the sale of the drug was then declared illegal, and the offenders are at this moment liable to transportation, or death. In a report from the Governor and Lieutenant-Governor of Canton, in 1836, they acquaint the Emperor, that "From the time that the prohibition was laid on, the crafty schemes and devices of evil men, have daily multiplied. On the one hand, receiving ships are anchored in the entrances from the outer seas; on the other, brokers, called melters, are everywhere established in the inner land. Then again, 'fast crabs,' and 'scrambling dragons,' as the boats are called, are fitted out for clandestine commerce; and lastly, vagabonds, pretending authority to search, have under this pretext indulged their own unruly desires." It is plain as daylight that the prohibition existed in all its force; for the report afterwards recommends that it should be removed, and a duty imposed; a recom-

mendation which the government, tender of the national well-being, has throughout resisted.

This report shows how small a value the head men in China set upon the lives of the commonalty; for it proposes, on the substitution of a duty for the existing prohibition, that "The government officers, the literati, and the military, shall still be restrained by regulations, and not suffered to inhale the drug; and that offenders among those classes shall be immediately dismissed the public service; while those of the people, who purchase the drug and smoke it, shall not be at all interfered with, for all will plainly see, that those who indulge their depraved appetites, are the victims of their self-sacrificing folly,—persons who are incapable of being ranked among the capped and belted men of distinction and learning. And if, in this way, shame be once roused, strenuous exertion and self-improvement will be the result, for the principles of reform are founded on shame and remorse." Another high functionary, the "Vice-President of the Sacrificial Rites," who also advocates the repeal of the prohibition, and equally recommends that "officers, civil and military, and scholars, and common soldiers," should be forbidden the use of opium, observes, as a set-off against the destruction of life among the other classes, "New births daily increase the population of the empire, and there is no cause to apprehend a diminution therein." The secret of all this is, that the governors and governed are two absolutely distinct races, as much as Christians and Jews, each cordially hating the other. The Tartars are the governors by conquest, the Chinese are the governed by the arm of the strongest: the former are deadly enemies, the latter anxious to trade and cultivate friendly relations with us.

There is, among the numerous documents before us, an exposition of the frightful effects, both moral and physical, which would do credit to a Christian pen. It is Councillor Choo-Tsun's memorial to the emperor, dated in October, 1836, and equally confirming the existence of the prohibition to trade in opium. He observes, "The people's minds gradually become callous; and base desires springing up among them, increase day by day and month by month, until their rank luxuriance has spread over the whole empire. These noisome weeds having been long neglected, it has become impossible to eradicate." He complains of the violation of the law, with regard to which he uses the following imagery:—"Laws which forbid the people to do wrong may be likened to dykes, which prevent the overflowing of waters. If any one, urging that the dykes are old and therefore useless, should throw them down, what words could picture the consequences of the impetuous rush, and all-destroying overthrow?" The trade in opium, of which Christian nations have been the shameless instigators, is truly a desperate calling, even with its instruments. "There are at Canton," he says, "in the provincial city, brokers named 'melters.' These engage money-changers to arrange the price with the foreigners, and to obtain orders for them; with which they proceed to the receiving ships, and there the vile drug is delivered to them. This part of the transaction is notorious, and the actors in it are easily discoverable. The boats which carry the drug, and which are called 'fast crabs' and 'scrambling dragons,' are all well furnished with guns and other weapons, and ply their oars as swiftly as if they flew on wings. Their crews have all the overbearing assurance and audacity of pirates. * * The thing to be deplored is instability in maintaining the laws."

"To sum up the matter," Choo-Tsun adds, "the wide-spreading and baneful use of opium, when regarded simply as injurious to property, is of inferior importance; but, when regarded as hurtful to the people, it demands the most anxious consideration; for in the *people* lies the very foundation of the empire. * * It is beyond the power of any artificial means to save a people enervated by luxury. * * Let the local officers redouble their efforts for the enforcement of the existing prohibition; and impress on every one in the plainest and strictest manner, that all who are already contaminated by the vile habit must return and become new men;—that if any continue to walk in their former courses, strangers to repentance and to reformation, they shall assuredly be subjected to the full penalty of the law." And in the true spirit of philanthropy he concludes,—"Thus happily the minds of men may become alarmed; and the report thereof, spreading over the seas, (to foreign parts,) may even there produce reformation."

The same writer throws a somewhat novel light on

THE CONQUEST OF JAVA.

"Opium was first produced in Kaoutsinne, which is said by some to be the same as Kalupa (or Batavia). The natives of this place were at first sprightly and active, and being good soldiers, were always successful in battle. But the people called Hung-maou (red-haired) came thither, and having manufactured opium, seduced some of the natives into the habit of smoking it; from these the mania for it rapidly spread throughout the whole nation; so that in process of time the natives became feeble and enervated, submitted to the foreigners' rule, and ultimately were completely subjugated."

"Now," continues the Chinese writer, "the English are the race of foreigners called Hung-maou. In introducing opium into this country, (China,) their object has been to weaken and enfeeble the Central Empire. If not early aroused to a sense of our danger, we shall find ourselves, ere long, on the last step towards ruin." The red-haired men of England may be long-sighted, but assuredly their vision has not extended to any such futurity as our friend "Choo-Tsun, member of the Council and of the Board of Rites," insinuates.

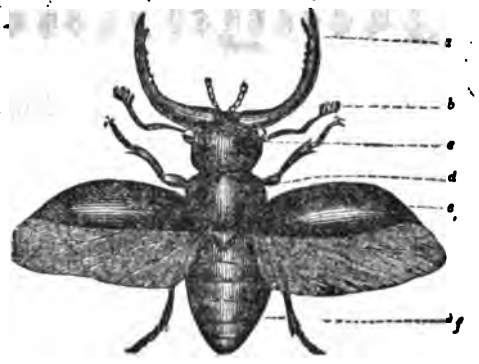
Nature I'll court in her sequestered haunts,
By mountain, meadow, streamlet, grove, or cell;
Where the poised lark his evening ditty chants,
And health, and peace, and contemplation dwell.
There study shall with solitude recline,
And friendship pledge me to his fellow swains;
There toil and temperance sedately twine
The slender cord that fluttering life sustains:
There fearless poverty shall guard the door,
And taste unspoiled the frugal table spread,
And industry supply the humble store,
And Sleep unbribed his dews refreshing shed.
White-mantled Innocence, etherial sprite,
Shall chase far off the goblins of the night;
And Independence o'er the day preside,
Propitious power,—my patron and my pride.

Smollett.

It is a strange and awful sensation, when, after having enjoyed, to the full, the powers and energies of manhood, we find ourselves suddenly reduced by the unnerving hand of sickness to the feebleness of infancy,—when giant strength lies prostrate, and busy activity is chained to the weary bed. It is strange, and it is awful; for it shows us most sensibly how frail a thing is that vigour which, in our boisterous days of health, we madly think an adamantine armour against all adversity. It is strange and awful; for it leads us to the brink of that fatal precipice, over which all must fall, and displays, as if from the very verge, the inside of our future grave.—James's *Attila*.

THE STAG BEETLE.

(Lucanus cervus.)



THIS is the largest of our British beetles, and is remarkable for the formidable appearance given to it by the possession of horny, toothed mandibles of an unusual size, somewhat resembling the horns of a stag (*a*). Including these mandibles the insect is generally rather more than two inches in length, and of a black colour: and on account of the length of its fore legs, it settles with the head much elevated, and thus assumes a threatening aspect. In the case of vast numbers of insects, which feed on the honey secreted in the nectaries of flowers, the organ by which they receive nutriment is nothing more than a slender tongue, of a tubular form, which the insect has the power of curling up in a spiral form to a convenient compass, or of suddenly unrolling, in order to draw up a supply of food from the bottom of a flower. But with the class of insects to which the stag beetle belongs it is different: these appear to feed on vegetable substances exclusively, but still on such as require mastication, and they are therefore furnished with jaws for the purpose. The various forms of the jaws of insects are thus spoken of by Kirby and Spence:—

The jaws are of very different constructions, but all admirably adapted for their intended services. some sharp and armed with spines and branches for tearing flesh; others hooked for seizing, and at the same time hollow for suction; some calculated like shears for gnawing leaves; others more resembling grindstones, of a strength and solidity sufficient to reduce the hardest wood to powder: and this singularity attends the major part of these insects,—that they possess in fact two pair of jaws, an upper and an under pair, both placed horizontally, not vertically, the former apparently in most cases for the seizure and mastication of their prey; the latter, when hooked, for retaining and tearing, while the upper comminute it, previously to its being swallowed.

The jaws of the stag beetle then resemble those of the greater part of eating insects in this respect, that they consist of an upper and of an under pair placed horizontally; the upper pair, or *mandibles*, being elongated in the extraordinary manner we have described, and the under pair, or *maxillæ*, which are inserted in the right and left of the inner cavity of the mouth, being slender and membranaceous, and thickly clothed with hair.

The *antennæ* of this insect (*b*) are (like those of all other insects) two in number, and so placed as to be under the immediate direction of the eyes. Their form is remarkable, being terminated by a sort of club, which probably aids the insect in the discrimination of its proper food. Naturalists differ as to the uses of the antennæ in insects: some consider them merely as *tactors*, or organs of touch, others as organs of smell; others believe them to be organs of hearing, since there is no other part of the insect which bears any analogy to the ear in animals, and since it has been proved that insects are sensible of sound.

The eyes of insects are immovable, but in order to make up for what would seem a disadvantage, numbers of them are furnished with what are called compound eyes. These eyes, when seen under the microscope, appear to consist of an infinite number of convex hexagonal pieces, the number however varying in different insects. The eyes of the stag beetle are compound, and are protected by a *cornea*, or outer coating of extraordinary thickness, rendered necessary by the prominent situation of the eye (*c*). Those insects whose eyes present the greatest number of these hexagonal pieces, or facets, are found to possess the most powerful sight, for the sight is regulated by this circumstance, rather than by the size of the eyes, which merely represents the extent of their visual horizon.

Insects, properly so called, when in their perfect state have only six legs including the anterior pair, or *arms* (*d*), as they are sometimes called from their uses, which are somewhat distinct from those of the legs, and from their position, inclining in a contrary direction to that of the hinder pairs(*f*). The middle pair of legs, in the insect of which we have given a representation, are hidden by the expanded wings, and wing covers. The organs visible between the horns of the beetle are called feelers (*palpi*) but their precise use is not clearly ascertained. Though we have described the stag beetle to be of a black colour, the *elytra* or wing-cases of this insect (*e*) are of a fine dark chesnut. These are of a horny texture, similar to that which covers the trunk, and completely envelope and protect the delicate texture of the wings, when the insect is at rest. The ends of the mandibles are occasionally tipped with red. The armour which thus protects the stag beetle seems to be entirely of a defensive kind, and the mandibles which give it so formidable an appearance, instead of being used for purposes of aggression, are merely employed in procuring subsistence, by wounding the bark of young trees, or piercing the outer coating of fruits, in order to obtain the sap or juices they contain. It has been likewise remarked that the insect has an extraordinary power of thrusting out the maxillæ, or lower jaws, for the purpose of lapping up the juices thus obtained, and that these maxillæ are furnished with a terminal portion, admirably adapted to the purpose, being long and flexible, not unlike the tongue of a bee.

The stag beetle is very rare in many parts of this kingdom, and perhaps may be quite unknown to the majority of our readers, though common enough in some parts of Kent, and in the vicinity of London. Its favourite trees are the elm, oak, lime, and willow, where it may be seen settled on the trunk, or flying about after sunset, in the middle of summer. We should remark that the description of the insect here given does not apply to the female, which is so much smaller and altogether so different in form, as for a long time to have been mistaken for a distinct species. The larvæ of these insects exist for three or four years in the state of large fleshy grubs, when they form a cocoon of chips of wood, glued together with a secretion which they emit. Within these they are transformed to the pupæ state, and soon afterwards appear in the form represented above.

There is a foolish notion prevalent in Germany, among the lower classes, that these insects carry off burning coals with their mandibles, and that in consequence of this, dreadful fires are sometimes occasioned.

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ON ORIENTAL BAZAARS.

One of the characteristics which distinguish an Eastern city from the generality of those in Europe, is the arrangement of the shops of commercial and trading people. In London, and other similar places, a tradesman, whether he be a carpenter, a shoemaker, or a grocer,—a maker of apparel, or a vendor of provisions,—a wealthy or a needy man,—takes a house, and perhaps a shop, in such a part of the town as his means, or his view of his own interests, may lead him to prefer; and if there be no other person of the same occupation vending near him, he thinks it, generally speaking, a fortunate circumstance, and one which will bring more custom to him.

Not so in the East. The shops are generally at some particular parts of a town; and frequently most of the persons engaged in one occupation, cluster in the same spot. The word *bazaar* is familiar to the readers of Oriental geography; it is a Persian word signifying a *market* or *forum*, and is applied to those parts of a town where business is principally carried on. Throughout India, Persia, Arabia, Syria, Turkey, and Egypt, bazaars are to be found; and we may, as a general rule, consider them to occupy a medium station, as to their character and mode of arrangement, between our markets and our retail shops, although they are, at the same time, very different from both.

Generally there is a cattle bazaar outside a town; for such markets are seldom allowed to be held within it. There are also vegetable bazaars, which, as well as those for cattle, are opened principally in the morning. But more frequently the word bazaar is applied to trading places held within the town, where handicraftsmen of various kinds expose their goods for sale. Sometimes the bazaar is an open square with shops or stalls arranged round its four sides under arcades. At other times there is a central point from whence several covered arcades radiate in different directions: in such an instance, the central place is called the *maidan*, or *square*; and each separate arcade is called a bazaar, with its distinctive appellation attached to that word. At Kermanshah, in Persia, there is a bazaar consisting of arcades occupying three sides of a square, the governor's palace occupying the fourth side. Generally speaking, however, an Oriental bazaar consists of a vaulted arcade, somewhat resembling Lowther Arcade, or Burlington Arcade, in London. These arcades are never exposed to the full glare of sun-shine, and are therefore cooler than the open streets.

The bazaars are in many cases painted and decorated with portraits of celebrated men, representations of battles, and ludicrous attempts at imitations of animals, &c. It is a general custom to have the entrances to these bazaars occupied by poor dealers, who cannot afford to have a stall in the bazaar, and who therefore expose their goods, which are of a cheap and common kind, in the open air, or else under a rude temporary roof. The central passage through the best bazaars is lined on either side with shops or stalls elevated from two to three feet from the ground. Each little shop has the appearance of a recess, since the arch forming the arcade springs from the front and not the back of the shops. Each shop is about six feet wide, the same in depth, and from eight to twelve high, and open in front. But in some bazaars there is a door at the back of the shop,

leading to a still smaller store-room, where the dealer deposits his goods for the night. The dealer generally squats down on the floor of his tiny shop, with all his goods spread out around him, and its small size enables him to reach all his wares without rising from his seat. Here he sits, smoking and chatting with his neighbours, and presenting a remarkably different object from the active and bustling London tradesman:—the one considers listless indolence as a charm of existence; the other is from morning till evening almost incessantly engaged,—hands, and eyes, and thoughts, all directed to one common end,—the acquisition of property; and seldom thinking about pleasure or recreation until evening has arrived. There is a good deal of mutual reliance among the inmates of the bazaars, they show much inclination to serve one another, and there is but little petty jealousy manifested among those who may be carrying on similar trades in adjoining stalls.

Mr. Fraser, the Oriental traveller, gives much information respecting the arrangement of the streets and bazaars of a Persian town, *generally* speaking,—for of course all are not alike. We are in the habit of hearing and reading of the splendour of Eastern cities, and the almost magical combination of flowers, and music, and jewels, and beautiful females, which charm the senses of a visitor. But in the first place, a great deal of this is exaggeration, and in the next place, whatever of luxury and comfort are to be found in the houses of the great in a Persian town, nothing of it appears externally; for the houses are carefully secluded by high mud walls, and around them, even to the very entrances, are clustered the hovels of the poor. Among these the stranger, on a visit to the town, makes his way, generally through passages and alleys, so narrow and full of impediments that a loaded ass gets along with difficulty. In such circumstances he is forced to dive into hollows, to scramble through the most offensive ruins, to stumble over gravestones, and even to risk his neck by falling into holes, particularly when in the dark; for there is no arrangement whatever for lighting artificially these intricate lanes. The *bazaars* are the only thoroughfares that deserve the appellation of streets; and some of these, as the long continuous ones at Ispahan, Shiraz, Teheran, Tabriz, and other chief towns, are spacious, lofty, solidly built, and, comparatively speaking, magnificent.

The construction of these bazaars may be shortly described as follows:—A paved pathway, varying from eight to sixteen feet in width, separates two rows of cells, before which runs a raised platform or continuous booth. Vendors of commodities are seated upon these, having their goods spread out near them: the vaults contain the remainder of their stock; and in some cases there is another apartment in the rear, which serves as a magazine for the more opulent shopkeepers. The whole is arched over, either with well-constructed brick-work or clay, or, in very inferior establishments, with branches of trees and thatch, which intercept the sun's rays. Here sit the merchants and various tradesmen, each class, for the most part, keeping to their respective quarters: so that smiths, braziers, shoe-makers, saddlers, potters, cloth and chintz sellers, tailors, and other handicraftsmen, may generally be found together; but confectioners, cooks, apothecaries, bakers, fruiterers, and greengrocers, are dispersed in various places,—sometimes setting out their wares in a manner sufficiently pleasing, although quite unlike that in which shops are arranged in Europe. Attached to the bazaars in the larger towns there are usually several caravanseries, for the accommodation of travelling merchants. The chambers of these are occupied both as offices for transacting business, and also for shops; and the gay appearance which they present, the bustle that prevails in the space before them, and the variety of costume, manners, and language, present a spectacle highly amusing as well as interesting.

Sir Robert Ker Porter, in allusion to the grand bazaar at Bagdad, observes,—

In proceeding to Mr. Rich's house, the point whither we were moving, we crossed through part of the great bazaar. It was crowded with people, and displayed every kind of Asiatic commodity for traffic. Numberless coffee-houses, intermingled with shops, were ranged on each side; all of which were well stored with silent and smoking guests, seated in rows, like so many painted automatons. There was a rustling sound of slippered feet and silken garments, and a low monotonous hum from so numerous a hive; but nothing like the brisk abrupt movement and clamorous noises of a Persian assemblage of the same sort.

A London shopkeeper, in five cases out of six, has his shop lighted up in the evening, especially in the middle of winter. Not so in the bazaars in the East: business terminates there with daylight. There are two reasons for this: a Persian or a Turk is but little imbued with the commercial enterprise that distinguishes Europeans; and the comparative lengths of day and night do not vary so much in those countries which approach the equator as in others situated further northward, therefore daylight is of longer continuance in winter in the former countries than in the latter.

It is generally understood that thefts are seldom committed in the bazaars. It is true the entrances are carefully closed at night from intruders; but the shops themselves are scarcely protected. None of the dealers reside in the bazaar, but go home to sleep and to meals. It is also customary for them to leave their shops in the middle of the day, when the heat is very great, and go home to their *siesta*, or mid-day nap. In such cases they merely throw a net or cloth over their goods, and leave them without any apprehension of thefts being committed. Ought we not to give a certain meed of praise to the poorer inhabitants of Eastern towns on this ground? An English shopkeeper would hesitate long before he thus abandoned his wares to the mercy of others!

Besides the regular shops in a bazaar, there is a species of brokerage or hawking carried on. If a person has any article to dispose of, he hires a crier, who takes it to a bazaar, and announces its quality and price; or if the seller be in a humble rank of life, he dispenses with the services of the crier, and endeavours to dispose of his wares himself in the same way: the motive for this is, that casual visitors will frequently give a higher price than the shopkeepers. Dealers in tobacco, snuff, opium, and other articles, frequently exhibit their wares upon stools, baskets, or cloths spread on the ground.

The bazaars resemble a Parisian coffee-house in this,—that they are a nucleus at which all parties collect together, and discuss matters of every kind, in a tolerably unrestrained manner; for if there is any liberty in an Oriental city, it is seen in the bazaars.

A traveller through a bazaar can generally purchase, for a trifle, excellently filtered water, which is carried about in buckets for sale, and which has a value which none but those acquainted with tropical climates can adequately understand.

EPIGRAM FROM MARTIAL.

GELLIA in private weeps not for the dead;
When friends are nigh, the ready tears are shed.
Can she feel grief, who seeks applause to reap?
They grieve sincerely, who in secret weep.—N. L. T.

ON NUTMEGS AND MACE.

NUTMEGS are the seeds or kernels of a tree called the *Myristica Moschata*, which grows in various islands of the Eastern ocean, and which attains the height of about thirty feet. These kernels are, as is well known, nearly spherical in form; they are at first of a lightish green, but as the tree advances in age, they change to yellow. *Mace* is a kind of membrane or skin, of a scarlet colour, which envelopes the kernel which we call nutmeg.

We have said that the tree which yields these spices, is a native of the Eastern seas*; and it so happens that the islands where they grow, and consequently the commerce in the articles themselves, were for a long time almost exclusively in the hands of the Dutch; but they were introduced, about fifty years ago, into the Isles of France and Bourbon, and from thence into the West India Islands. The commerce in the nuts has been carried on for a long time; but it is only within comparatively a recent period, that the nature and growth of the tree which produces them has been known to European botanists.

The nutmeg-tree is said to bear fruit and leaves at almost all ages; and when an incision is made in the bark of the tree, or a branch is cut off, or a leaf detached, a viscous sap or liquid flows out, of a reddish colour, and with the property of imparting to linen a tolerably permanent stain.

The nuts are not fit for gathering, until about eight or nine months after the flowers which produced them have blown: before that period, the nuts are not fit to be used in their raw state, but are made up into marmalades, &c. The tree begins to bear fruit at about the age of seven years; and in order to obtain the most favourable result, the nuts are planted bare, or deprived of their shell, and they begin to germinate in about thirty or forty days. The tree yields generally three crops annually; the first in April, which is the best; the second in August; and the third in December. There are several varieties of the tree, but that denominated the Queen nutmeg, which bears a small round nut, is the best.

The mode of collecting the nuts, is as follows:—when the fruit is ripe, the natives ascend the trees, and gather it by pulling the branches towards them with long hooks. Some of the men are employed in opening them immediately, and in taking off the green shell or first rind, which is laid together in a heap in the woods, where it putrefies in course of time. As soon as the putrefaction has taken place, there springs up a kind of mushroom, called *Boleti Moschatyni*, of a blackish colour, and much valued by the natives, who consider them as delicate eating. When the nuts are stripped of their first rind, they are carried home and the *mace* is carefully taken off with a small knife. The mace, which is of a beautiful red, but afterwards assumes a darkish colour, is laid to dry in the sun for the space of a day, and is then removed to a place more sheltered from the sun's heat, where it remains for about a week, in order that it may soften a little. It is afterwards moistened with sea-water, to prevent it from drying too much, and from losing its oil; but the natives are careful not to employ too much water, for fear of its becoming putrid, and being devoured by worms. It is then put into small bags and squeezed very closely, in order to preserve its fragrance and consistence. The mace thus prepared has a pleasant aromatic smell, and a warm, bitterish, moderately pungent taste: it is thin, flat, and membranous, of an oleaginous nature, and of a yellowish colour. We receive it in irregular flakes of an inch or more in length: the surface is smooth, the texture close and easily cut. Mace is, generally speaking, of an astringent and dying nature.

So much for the skin which covers the nutmeg; we must now speak of the mode of treating the nut itself, after the skin has been removed from it. The nuts, which are still covered with their ligneous shell, are exposed to the sun for three days, and afterwards dried before a fire till they emit a sound when they are shaken: they are then beaten with small sticks, in order to remove the shell, which flies off in pieces. The nuts are then distributed into three parcels, the first of which contains the largest and most beautiful, which are destined for the European markets; the second contains such as are reserved for the use of the inhabitants; and the third contains the smallest, which are irregular or unripe. This last sort are burned; and the remaining part is employed for yielding oil by pressure. The selected nutmegs would soon corrupt, were they not moistened with lime water, made from calcined shells, which is diluted with salt water till it attains the consistence of pap. Into this mixture, the nutmegs, contained in small baskets, are plunged two or three times, till they are completely covered over with the liquor. They are afterwards laid in a heap, where they become warm, and lose their superfluous moisture by evaporation. When they have sweated sufficiently, they are properly prepared and fit for a sea voyage.

The natives of the Banda Island preserve the fruit of the nutmeg-tree entire, in the following manner. When the nut is nearly ripe, it is boiled in water and pierced with a needle; it is then laid in water for ten days, to soak, till it has lost its sharp sour taste, and then it is boiled gently in syrup of sugar, to which a little lime is sometimes added. This operation is repeated for eight days, and each time the syrup is removed. The fruit, when thus preserved, is put for the last time into a tolerably thick syrup, and is kept closed down in earthen pots.

When nutmegs are distilled with water, they yield a large quantity of essential oil, very much resembling, in flavour, the spice itself. When the distillation is completed, an insipid substance is found swimming in the water, and the decoction yields an extract of an unctuous nature, and of rather a bitter taste. The whole virtue of nutmegs may be extracted by infusion, while very little of it is elevated in distillation: consequently, the spirituous extract retains the flavour of the spice to a large extent. When nutmegs are heated and pressed, they yield a considerable quantity of limpid yellow oil, which assumes a thicker consistence on cooling. The substance sold under the name of *oil of mace*, is really oil of nutmeg. There are three qualities of it, that which is brought from the East Indies in stone jars is the best; it is of a thick consistence, with the colour of mace, and has an agreeable fragrant smell. A second sort, which is of a paler colour, and much inferior in quality, is brought from Holland in solid masses of a flattish square figure. The inferior sort, generally called *common oil of mace*, is an artificial composition of suet, palm oil, and other substances, flavoured with a little of the genuine oil.

Nutmegs preserved entire are presented as a dessert by the natives of Banda; and the inhabitants of India sometimes eat them when they drink tea. Some use nothing but the pulp; others chew the mace, but they generally throw away the kernel, which is really the nutmeg. Many who perform sea voyages to the north, chew nutmegs every morning.

* See *Saturday Magazine*, Vol. VII., p. 23.

COSSACK HOUSE OF LORDS.

EXTRACT OF A LETTER FROM CHARKOFF, IN THE UKRAINE.

AT the period of my arrival in this town the whole body of the nobility in the Ukraine were collected there for the purpose of advising on provincial affairs, and electing the provincial authorities. I believe you in England have no conception that there are any such meetings of the states in this quarter of the globe, or that the Autocrat of Russia allows any portion of his lieges even the shadow of independence. I cannot do better, therefore, than undeceive you by sending you a report of the deliberations of the '*Wuidor*' of the Ukraine,—at least of such of them as fell under my own observation while staying here.

Charkoff has its own '*Dvorantsva Sobranie*' (House of Assembly for the Lords), a building principally fitted up with a spacious hall, and rooms leading into it. This hall is made use of, not only for the deliberations and acts of the nobility, but for balls, banquets, &c., during the session of the Wuidor. Along the sides of the hall is a range of chairs and tables, covered with green cloth, for the representatives of the eleven circles of the Ukraine. Over each table there are the armorial bearings of each circle painted on the wall; those of "Valki," for instance, are a couple of plums and pears, designating that it abounds in fruit; the arms of "Sjurni" (literally *sacks*), are a brace of sacks, in allusion to the origin of the name, as well as of the wealth of the district, which was a place of deposit chosen by the Cossacks of that quarter for their predatory spoils and well-filled bags. The High Marshal of the circle presides at each table, and the '*Gubernski-Predwoditel-Dvorantsva*' (Grand Marshal of the Emperor), who acts on every occasion as the representative of the whole nobility of the province, is the Lord President of the house. The session at which I was present mustered a couple of hundreds of the aristocracy, and on the days of their meetings the space in front of the house was crowded with a larger concourse of equipages than I have ever seen in Abingdon Street, or in front of the Luxembourg.

The appearance of the house, when assembled, was quite equal to the Chamber of Deputies in Paris. The members' costume consisted of an elegant uniform of green, with crimson collars and cuffs embroidered in gold, and swords in silver scabbards. . . . There was no want of life in the proceedings; speech followed upon speech in rapid succession, and the eloquence of several of the speakers was much commended to me. Whenever a written proposition or resolution, or the record of an election, or an official intimation from the government was read, the old Cossack custom, of striking the floor or one of the tables with a sword, was never omitted; the party whose duty it was to read it, came forward, and walked up to each of the four corners of the hall in succession, where he separately read it with due solemnity. On several occasions I observed that these communications caused great agitation among the members, and those who delivered their sentiments upon them were interrupted at times by boisterous cries and tumultuous movements throughout the hall. I thought there would have been no end to the loud acclamations which accompanied the farewell speech of one of the Kovaleffsky family, who had filled the office of High Marshal for the last three years, and now laid it down. His eyes filled with tears as he acknowledged his sense of the cordial support he had received from his colleagues. The whole house, rising from their seats, rushed into the middle of the hall and crowded close round the speaker whenever he elicited their applause. They were loud in soliciting the Marshal to announce himself as a candidate for the new election, but he was as decided in declining the honour.

After peace was restored, the several candidates came forward, made their bows to the house, and were received with more or less favour, according as they were popular or otherwise. Some, who were cordially greeted, laid their hands on their hearts, and addressed a few words to the house. But one of them, who was probably prompted by vanity rather than by the conviction that members were at his back, was overwhelmed by an unanimous shout of '*Uvolnaim! Uvolnaim!*" (We will have none of him!) The house then proceeded to the ballot, on which occasion each circle came forward at the call of their names to ballot; and the majority of balls was in favour of General Rachmanoff, who had 150 out of 200. The announcement of the election was received with a storm of plaudits, which the veteran was not present to enjoy.

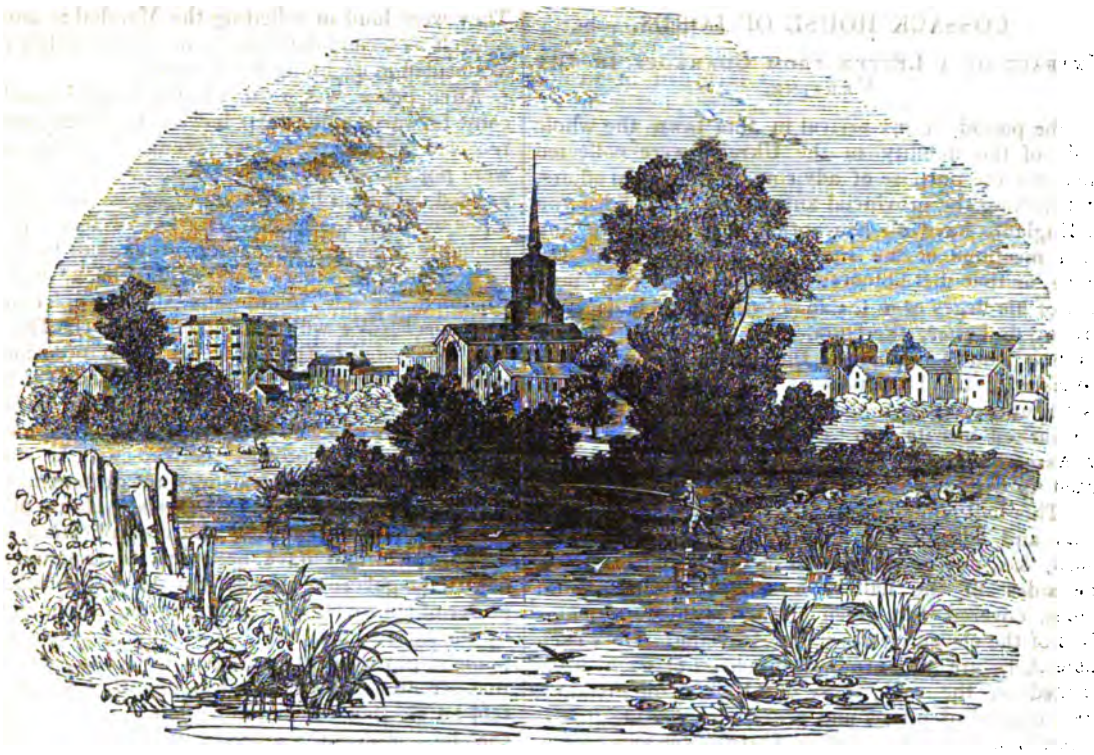
You will now see that this Cossack House of Lords is by no means of so tame and insignificant a character as you would have been apt to conclude. The lieutenant-governor of the Ukraine has, I admit, the power of approving or rejecting the appointments made by the house; but it is well worthy of notice, that no noble in government pay has a seat in the house, and that strenuous attempts are frequently made to maintain an election which is unpalatable to the "powers that be." To such a length indeed has the house at times asserted its independence, that it has more than once been a question with them whether the Ukraine should not be blotted out altogether from the list of provinces, and parcelled out among its neighbours.

In former days every nobleman in the province, whether great or small, was entitled to take his seat; but an *ukase* was issued several years ago, forbidding any lord to sit in the "Wuidor," who was not proprietor of a hundred serfs or upwards. A short time however after this rule was laid down, a nobleman insisted upon being admitted into the house who had not quite the stipulated number of dependants, counting upon his popularity and influence to carry him through. As soon as he made his appearance in the house he was instantly denounced by a rich aristocratical colleague, who heartily detested him, and was called upon by his foe to leave the house. "Your charge is just," he replied, "I admit that I have not a hundred souls at my call, but I have a soul which is worth a thousand such as yours;" and he straightway ran his adversary through with his sword. You will allow that such scenes as this have somewhat "too much life" in them; but they are types of national character.

D. A.

PAYING of debts is, next to the grace of God, the best means in the world to deliver you from a thousand temptations to sin and vanity. Pay your debts, and you will not have wherewithal to purchase a costly toy, or a pernicious pleasure. Pay your debts, and you will not have what to lose to a gamester. In one word, pay your debts, and you will of necessity abstain from many indulgences, that war against the spirit, and bring you into captivity to sin, and cannot fail to end in your utter destruction, both of soul and body.—DELANY.

THE accuracy of Milton, in speaking of angel forms, that lay entranced, "Thick as autumnal leaves that strow the brooks In Vallombrosa," has been called in question by some persons; because, as they say, the trees are all evergreen in those woods. But Mrs. Piozzi observes that Milton was right, it seems, notwithstanding; for botanists state that nothing makes more litter than the shedding of leaves, which replace themselves by others, on the plants styled evergreen; these change like every other tree, but only do not change all at once and remain stript till spring.



CHELMSFORD, ESSEX.

Chelmsford is one of the most considerable towns in Essex, being nearly in the centre of the county, and in the direct route of travellers from London to Colchester and Harwich, and also to many parts of Suffolk and Norfolk. In it is held the election for the county members; and also the assizes, general quarter sessions, petty sessions, county courts, &c., some of them alternately with Colchester.

In the time of William the Conqueror, Chelmsford was possessed by the Bishop of London; but the town was of no importance until a bridge was built over the river Can, by which the high road to other parts of Essex was made to pass through Chelmsford. About the year 1200, a market-place was established here, and from that time it assumed some degree of importance in the agricultural affairs of the county; but it has never been a manufacturing town.

The neighbourhood surrounding Chelmsford is extremely pleasant, and the soil very fruitful in the production of various kinds of grain. The town is situated in a hollow, being approached from all sides by a descent. The river Can flowing from the north-west, passes near the town, and meets the *Chelmer*, a small river from whence the town takes its name. Near the centre of the town is a conduit, supplied with a continuous and copious stream, derived from a spring named Burgess's Well, situated near the town. This conduit appears to have existed for a considerable time, but its exact age is not known. It has four pipes on the four sides, one to each, and from each pipe flows a perpetual stream of the purest water. On one of the sides was formerly this inscription:—

This conduit, in one minute, runs one hogshead and a half and four gallons and a half; and in one day, two thousand two hundred and sixty-two hogsheads and fifty-four galloths.

About seventy years ago, Sir William Mildmay left two hundred pounds, the interest of which was to keep the conduit in repair; and it was rebuilt in 1814 at the expense of the inhabitants: channels of pure water flow from the conduit through the principal streets, and contribute greatly to the cleanliness and health of the town. In addition to the supply of water obtained from the conduit, a fine spring bubbles up in another part of the town. There is also plenty of water in the neighbourhood; but it is found, that in order to obtain it of good quality, it is necessary to bore entirely through the stratum called London clay, which is in some places three hundred feet in thickness. It is by such means that some commodious baths, built near the centre of the town, are supplied.

The Chelmsford shire-hall is a commodious and handsome structure, and was built in 1792 by Mr. Johnson. In consequence of the building having been completed much within the estimated expense, (a very unusual circumstance in such matters) the inhabitants voted the architect a valuable silver cup, as a token of their respect and satisfaction. It is a square building, with four three-quarter Ionic columns, supporting a pediment. An open space on the ground-floor is occupied by market-people and corn-dealers. There are two session rooms, a jury room, an assembly room, and other commodious apartments.

A free grammar school was founded at Chelmsford, in the reign of Edward the Sixth, in compliance with a memorial presented to him by the principal inhabitants of the town. The school was placed under the government of the memorialists, and was to remain in their families for ever, for which a kind of charter of incorporation was granted to them.

There are two charity schools, each more than a century old. The dresses, the mode and extent of education, the salaries of the master and matron, &c., are similar to those of other charity schools elsewhere. There are also schools appointed by the County of Essex Society; as well as a national school and an infant school.

Among the places of worship at Chelmsford, are, the parochial church, and chapels or meeting-houses for the various denominations of Baptists, Wesleyans, Old and New Independents, and the Society of Friends. The church is a fine stately fabric, forming

by far the most distinguished ornament of the town. When the church was first built is not known; but a considerable portion of the present building was erected in 1424. This event was recorded in an inscription placed beneath the battlements, but many of the letters are now defaced, and the only legible words are the following:—

Pray for the good estate of all the townshepe of Chelmysford that hath been liberal willers and procorers of helpers to thys worke; and for . . . . them that first began, and longest shell contenowe . . . . it . . . . in the year of our Lord i. thousand iiii. hundreth xxiiii.

The length of the inside of the church is one hundred and twenty feet, and of the nave one hundred and two feet: the greatest breadth is fifty-four feet.

When the churches of Essex, (says Mr. Wright, in his excellent history of that county,) underwent a visitation, in the year 1634, numerous escutcheons, and banners and coats of arms were found in the roof of the centre aisle, among which were the arms of Edward the Confessor, and of various great men who had been liberal contributors towards the building; these were taken away at that time as emblems of superstition. The eastern window is of painted or stained glass of modern workmanship; it occupies the place of an ancient master-piece of art, believed to have been as old as the original foundation of the church. The subject was the history of Our Saviour, from his birth to his ascension; and the sublime and pathetic scenes it exhibited might well have preserved it from destruction, except by the hands of ignorance and fanaticism.

Such, however, was not the case; the mistaken zeal of that age professed to quarrel with everything that savoured of an episcopal or state form of worship. In 1641, the Puritan parliament issued an ordinance, by which all "scandalous pictures" should be removed from churches, and this beautiful window was doomed to destruction. The rector and churchwardens, however unwilling to deprive the church of such an ornament, were forced to comply, and they removed most of the painted subjects from the window, and replaced them with new glass. But the mob, acting from the violent impulses which so often influence assemblies of uneducated persons, were not satisfied with this, and proceeded to beat down and deface the whole of this beautiful window, by attacking it with stones, sticks, and other weapons.

Part of the body of the church is modern, and was erected to supply the place of the ancient walls which partly fell down in January, 1800: in the repairs, the ancient style of the building was tolerably well preserved, but the inside was modernized and elegantly finished; and the church was re-opened in September, 1803. A massive square tower rises from the west end of the church, with battlements and pinnacles at the four corners; and on the top is a lantern, with a shaft:—the tower contains a peal of ten bells.

There are a county gaol, and a house of correction, near the town. The former comprises different compartments for the classification of prisoners; in the front is the gaoler's house, and within the walls an infirmary and chapel; the prisoners are employed in various kinds of work, the profits of which are applied towards the support of the establishment. A house of correction, built in 1806, is now only used for convicted female prisoners, its former office being now filled by the new couse of correction. This latter building is capable of containing 254 prisoners, of whom 218 may be confined in separate cells. It comprises seven distinct ranges of building, radiating from a spacious area, comprehending with the site of the buildings nearly nine acres, in the centre of which is the governor's house, including a neat chapel, and commanding a view of fourteen court-yards or areas for the proper classification of the prisoners. In eight of these yards are tread-wheels, furnishing labour for 213 persons at one time; in two others are capstans, and in one a windlass and machinery for raising water; there are fourteen day-rooms, two of which are used as workshops for shoe-makers; eight store-rooms, one of which is used as a work-room for tailors; an infirmary, a lazaretto, a bath, and other offices. Two of the tread-wheels are attached to a mill which grinds corn for the use of this prison, the county gaol, and the house of correction at Barking.

Chelmsford, although a considerable place with respect to county influence, has not the privilege of sending members to parliament.

The town is favourably distinguished by the liberal extent to which its inhabitants support charitable institutions for the relief of the needy and afflicted.

THE ROOK.

Should I my steps turn to the rural seat,
Whose lofty elms, and venerable oaks,
Invite THE ROOK, who high amid the boughs,
In early Spring his airy castle builds,
And ceaseless caws amusive; there, well-pleased
I might the various polity survey
Of the mixed household kind.—THOMSON.

THOSE persons who live in the neighbourhood of a rookery, and have paid any attention to the pursuits of the busy community therein; who have watched the patient industry of its inhabitants, their love of justice, their habits of order and regularity, their attachment to their home, the punishment of offenders against their established laws and customs; with the amicable intercourse which appears to be kept up amongst them by means of messengers dispatched from nest to nest;—such persons will readily agree with us, that many a good and useful lesson, and many a virtue necessary to be practised by ourselves, may be learned from them, if we are not too proud to notice such instructors. The incessant cawings, and apparent contentions among these birds during the time in which they are occupied with the preparation of their nests, may have given them the character of a noisy and quarrelsome race; but we feel inclined to defend them from this charge, and to assert that the contests observed at this period arise generally, if not wholly, from the disposition of the younger pairs to encroach upon the rights and privileges of the older rooks; which disposition is checked and punished by the unanimous voice of their seniors; and thus a clamour and outcry are raised, as of general war.

The rook has been named by Linnæus, *Corvus frugilegus*, or corn-gatherer, as the latter word implies; its plumage is of a fine glossy black, while the sides of the head and neck are of a very rich blue. The beak is straight, and the skin which surrounds it is of a light gray colour: this skin is covered with hairs in the young bird; but in the old, the hairs are exchanged for a scaly kind of coating. This seems to be a natural habit of the bird; though it is accounted for by some naturalists, on the supposition that the constant digging for food gradually wears away the hairy covering which the young birds possess: other creatures, however, dig as laboriously as they do, and without injury to the fur or feathers with which they may be clothed; so that we can scarcely suppose the rook to suffer from its exertion in this respect. The length of a full grown rook is about nineteen inches, and the width across the wings thirty-eight inches. The weight is generally about nineteen ounces.

The character of the rook is that of a cheerful, industrious, early-rising bird: that man is a most industrious one who can get to his work before him; for he is up with the early dawn, and off to the newly-

ploughed fields, uttering his noisy song as he goes. He is however scarcely satisfied till the teams are a-field, and seems by his impatient cawing to reprove the delay of the rustic; but when they are once arrived, and have begun their accustomed task, he is not slow or shy of aiding them to the utmost of his power. Fearlessly and indefatigably he follows the plough, picking up the grubs and worms with avidity, and thus rendering an essential service to the farmer; but his services in this way are not confined to the ploughing-season. When the young wheat is springing up, and when it presents to the inexperienced eye, an uniform healthy appearance, the sagacious rook by some wonderful instinct beyond our comprehension, is sure to detect a great number of unhealthy blades, at the root of each of which the grub of the cock-chafer, or of some other injurious earth-caterpillar, is carrying on its work of destruction. Upon these larvæ he feeds; and it is quite certain that he prefers an insect diet to any other, however the calls of hunger may sometimes urge him to seek for other means of subsistence. We cannot deny that, in very hot summers, or in very severe winters, when few insects can be found, the rook is a corn-eater, and also a great enemy to a newly-set potatoe-crop, but this he is not from preference, but from necessity. When all other means fail, and the ground is hardened by frost, or by a long continuance of dry weather, there is no other resource for these famished birds: we have seen them at such times literally covering the sides of a wheat-rick, and using all their strength in endeavouring to pull out the ears of corn. They would not eat grain in this state unless impelled by hunger to do so; for they are found by those who have tamed them, and have made the trial, to reject it, except after long fasting, and to show no regard for corn, except such as has undergone the malting process. The question has often been asked, "Is the farmer a gainer or a loser by these birds?" Without attempting to maintain that the rook does little or no mischief, we are yet of opinion that the insects he lives on would do much more.

From its sometimes eating grains and other seeds (says Selby) the rook has been erroneously viewed in the light of an enemy by most husbandmen; and in several districts, attempts have been made either to banish it or to extirpate the breed. But wherever this measure has been carried into effect, the most serious injury to the corn and other crops has invariably followed, from the unchecked devastations of the grub and caterpillar. As experience is the sure test of utility, a change of conduct has, in consequence, been partially adopted, and some farmers now find the encouragement of the breed of rooks to be greatly to their interest, in freeing their lands from the grub of the cock-chafer, (*Melolontha vulgaris*) an insect very abundant in the southern counties. In Northumberland it is of great use in feeding on the larvæ of the insect commonly known by the name of Harry Longlegs (*Tipula oleracea*) which is particularly destructive to grain and young clover.

In severe weather, especially after a heavy fall of snow, rooks frequent the sea-shore, where they feed on small sea-fish, particularly the common muscle. In order to break the shell of this fish, the clever bird flies aloft with it to a height of about fifty feet, and then lets it fall on a rocky place, and quickly descends for his prey. If he be not successful in breaking the shell at once, he will try again and again, till he has accomplished his purpose; and this he has much difficulty in doing when the wind is high and the shell is carried out of its proper direction.

The patience and assiduity of these birds are put to a severe test during the nesting season. They have often to make long excursions in order to procure food for their young, and with all their industry they can scarcely appease the cravings of five young birds, who will readily devour their own weight of food in a single day. In a hot and dry season, it frequently happens that the young birds perish with hunger: not all the labours of the parent birds, nor the plundering habits they then acquire being adequate to the supply of their necessities.

The perseverance and unceasing industry of the rook furnish a useful lesson, and one which may be easily read, where rooks abound as they do in this country. But its untiring activity is chiefly remarkable in the construction of its nest. It is well known that of all the trees of the forest and grove the elm is the rook's favourite; on its lofty branches he prefers to build; and though he has been known to make his dwelling in the oak, whose wide and branching head affords like facilities for the erection of his little "wicker castle," yet it is by no means usual that he should seek any other accommodation for his future brood than that which is afforded by the ample summit of his favourite tree. But it is not every tree in an avenue of elms that will suit the rook's purpose. Notwithstanding the eagerness and restlessness of character which he displays in his ordinary work, he does not rashly choose the home of his future family. Accompanied by his mate he carefully surveys one tree after another, minutely inspecting the different branches, with an air of extreme caution; and this not for a few hours, but for many days. When the most convenient branch is at length selected, the young pair sit patiently on it for two days longer, apparently deliberating on its fitness for their purpose, and observing in what way it is affected by the winds and weather. Thus, having taken every precaution to ensure the safety of their future progeny, they begin to gather materials for their nest, such as sticks and fibrous roots, which they arrange in the most substantial manner. But it may happen that on an adjoining branch there lives an older pair; and as the young couple soon grow weary of fetching materials from a distance, and begin to supply themselves from the neighbouring nests, their company is by no means desired, and the senior birds, both in punishment of the theft and to get rid of their troublesome neighbours, begin an attack on the half-formed nest, and soon succeed in its demolition. The young pair, little discouraged by this disaster, immediately set about the choice of another branch; and having found by experience that "honesty is the best policy," they no longer molest the other birds, but patiently collect the requisite supply of materials from the surrounding fields and hedges; and in order to guard against the thievish propensities of other young beginners, who, like themselves, are at first anxious to furnish their nests with as little trouble as possible, they separate; and while one flies to fetch materials, the other remains to watch over them, and to drive away approaching pilferers. A commodious nest being now prepared, and duly furnished with a lining of soft grass, the female begins to lay her eggs, and from that instant hostilities are at an end; no thief will now venture to molest her, and she is allowed to rear her young brood in tranquillity and peace. During this season she is never long absent from her nest; the male bird brings food to her as well as to the young ones, until the latter are old enough to be left without danger, when both parents are employed in supplying their wants. When the young birds are fledged, and have left the nest, the parents no longer retain any remembrance of or affection towards them; the old birds keep possession of the same nest during succeeding seasons, returning to it in the autumn, apparently for the purpose of repairing it and strengthening it to bear the winter's storms, and in the following spring they make the necessary preparations for rear-

ing another family. The birds which were hatched the preceding year are in the mean time preparing their nests in the same rookery, or they have joined a body of emigrants to another grove. To attempt an entrance to *another* rookery would be to them a vain and fruitless proceeding; for friendly and social as the rooks are to birds of their own community, they all unite to prevent the entrance of another rook into their society, and to punish with due severity the unwelcome intruder.

We know not the motives which lead a body of rooks to emigrate from their homes: perhaps the community has increased to an inconvenient extent, and they find it necessary to seek another neighbourhood, where the supply of their wants may be more certain: perhaps they like not the chastisement they are continually receiving from the older rooks, and determine to seek an unmolested spot, where, if they have not the advantage of pilfering the materials for their nest, they may at least get a better chance of finishing it in peace. However this may be, we soon observe in these emigrants the same attachment to their newly found home which they had previously evinced for their native dwelling,—the same orderly habits are prevalent,—the same laws of justice enforced,—with the same watchfulness against intrusion and interference on the part of others.

There is something very pleasing in the consideration of the social tie which unites these sagacious birds into one community: a friendly feeling is manifested throughout the society; if a fraud be committed on one, all the rest are ready to unite in the punishment of the offender; if the rooks are feeding in parties, one of their number always stands sentinel, and so vigilant is he in the performance of this duty that it is no easy matter to get within shot of a foraging party: hence the country people affirm that rooks can *smell* gunpowder. In addition to these marks of social feeling, we observe that amicable messages appear to be constantly passing in a rookery; and as there is little doubt of birds being able to communicate intelligence in their own peculiar manner, we may fairly suppose that these messages convey to the several members of the community such tidings as have reference to their united welfare.

After the young rooks have taken the wing, there is a general desertion of the nesting-trees; but the families return to them frequently; and in October they roost in them and repair their old dwellings. In winter the forest may be called their habitation; but, instead of forgetting their nests, they visit them every day, and, cawing in a softened and melancholy tone, seem to regret the ravages which a bleak and stormy season has made in their beloved home. Thus, from year to year, the rook is an inhabitant of our country, and joins, not inharmoniously, in the softer music of our groves; while in many other countries he is only a visitant, announcing to the inhabitants of Siberia the return of summer, and to those of France the approach of their winter season. The rook is found as far north as the milder parts of Sweden, but he is soon driven from thence by the severity of the winter. In their emigration they assemble in flights so dense as to darken the air; and on this occasion they have no objection to join company with the common crow, the jackdaw, and the starling.

In extensive rookeries it is thought necessary to thin their numbers by shooting many of the young rooks every season. The time chosen for this purpose is when the birds have left their nest, but remain on the branches, unable to fly far from their homes. The diversion, if it can be called such, seems a very poor and unworthy one, exercised as it is against a race of birds who have fearlessly assembled near our dwellings, and whose labours are of such essential service to the agriculturist. There is something very cowardly too, in attacking a creature which can neither defend itself nor seek safety in flight. It is affirmed by some naturalists that were the cruel practice of shooting the young birds altogether discontinued, there would be no sensible increase in the number of nests in a rookery; for, when the birds found themselves too numerous in one society, they would quickly form another, and emigrate to some distant spot, for the purpose of selecting a more commodious dwelling. If this be the case, we may surely hope to find the custom of rook shooting gradually abandoned, for no one would follow so cruel a sport for the mere pleasure afforded by it, unconnected with the advantage of keeping down the number of the birds. The flesh of the rook is bitter and unfit for food, and though the young birds are sometimes eaten, they offer little attraction to the sportsman on this account; the usual method of placing them at table is in the form of a pasty, (for which purpose the rooks are skinned, in order to remove in some measure the bitter flavour peculiar to them,) but even in this form they make but a sorry dish, and are generally despised. When therefore the advantages connected with the increase of rooks are properly understood, the farmer will doubtless be found protecting instead of maiming and destroying the young progeny.

We feel quite certain (says Bishop Stanley, in his very pleasing and useful little work on Birds*,) that on striking a fair balance, the advantage will be in favour of preserving the rooks; and that if every nest were pulled to pieces, the farmers would soon do all in their power to induce the old birds to rebuild them; finding out, when too late, that their crops might suffer the fate which befell an entire district in Germany, and which was once nearly deprived of its corn harvest, by an order to kill the rooks having been generally obeyed; the immediate consequence being an increase of grubs and their depredations. For allowing that the rook may do an occasional injury to the husbandman, it confers benefits in a far greater proportion, and to an extent of which few are aware. Many provinces in France were so ravaged by grubs, that a premium was offered by government for the best mode of ensuring their destruction, and and yet singularly enough, so little were the people acquainted with the real and best method of stopping the mischief that when the Revolution broke out, accompanied with murder and bloodshed which can never be forgotten, the country people, amongst other causes of dissatisfaction with their superiors, alleged their being fond of having rookeries near their houses; and in one instance, a mob of these misguided and ignorant people, proceeded to the residence of the principal gentleman in their neighbourhood, from whence they dragged him, and hung his body on a gibbet, after which they attacked the rookery, and continued to shoot the rooks amidst loud acclamations†.

In concluding our account of rooks in their social state, as they dwell in large communities in groves or avenues of lofty elms, we would recommend to the attention of our readers some of the good and valuable habits of these birds. Their early hours, their unceasing industry, their perseverance in overcoming difficulties, and their love of home, are not unworthy of our imitation. Let the sight of a rookery, then, remind us of our duties in these respects, and the busy, cheerful, noisy community will not exist for us in vain.

* *A Familiar History of Birds, their Nature, Habits and Instincts.* By E. Stanley, D.D., Lord Bishop of Norwich; President of the Linnæan Society.

† *Saturday Magazine*, Vol. I., p. 245.

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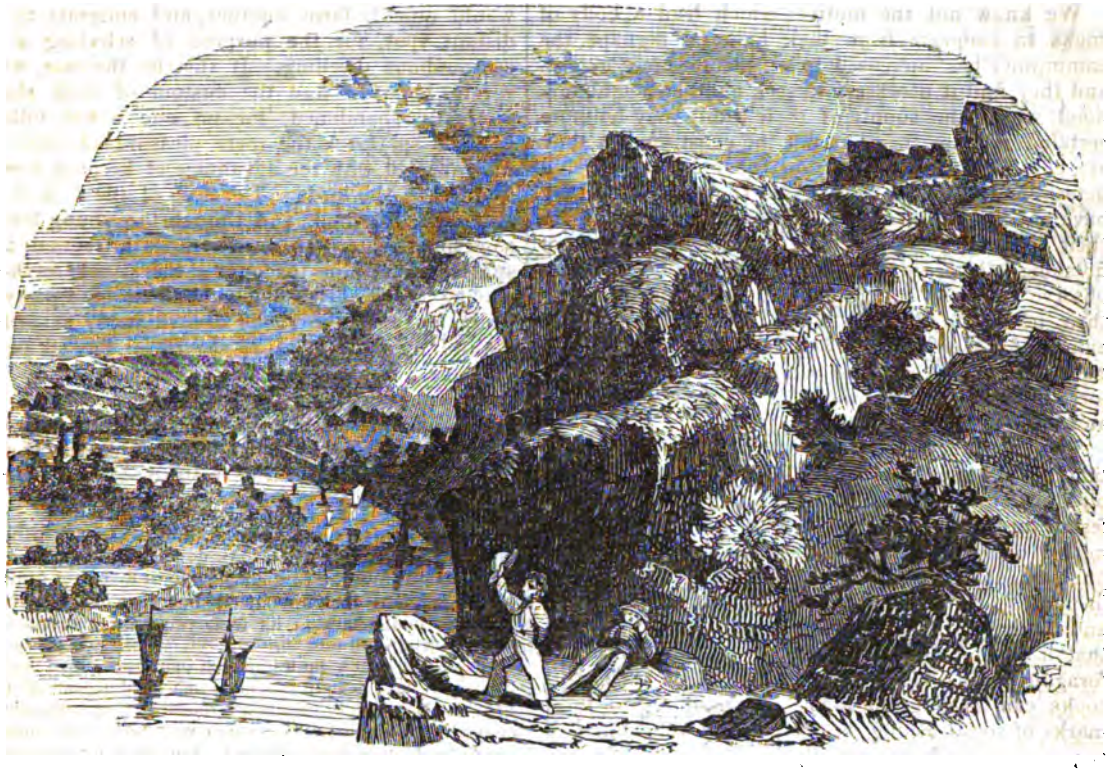

THE BANKS OF THE TAMAR.

I.

There are but few rivers in England more celebrated for romantic and beautiful scenery than the *Tamar*. This river forms, nearly throughout its whole extent, the boundary between the counties of Devon and Cornwall, the former occupying the eastern, and the latter the western bank. It rises in the parish of Morwinstow, near the northern extremity of Cornwall. Soon after this it becomes the boundary between the two counties, and continues so, with very little interruption, for the remainder of its course, a distance of about forty miles. In the parish of Werrington it has Devonshire on both banks, and the village of Werrington on its western side. The Werrington river, which rises near Tremaine, runs through Werrington Park, and falls into the Tamar near the upper new bridge. On the east side of the Tamar, near the river, are the Devonshire parishes of Pancrasweek, Bridgerule, Tetcot, Luffincot, St. Giles on the Heath, Lifton, Bradstone, Dunterton, Milton Abbot, Sydenham, Beer Ferrers, Tamerton Folist, and St. Budeaux. The Tamar becomes a wide estuary near Beer Alston, and further on, below Saltash, which is on the Cornwall side, forms the harbour of Hamoaze, falling into Cawsand Bay, between Mount Edgecumbe on the Cornish side, and Stonehouse on that of Devonshire. The smaller rivers which fall into the Tamar, besides the Werrington, are the Wick, the Derle, the Deer, the Cary, the Claw, the Lyd, and the Tavy.

The source of the river is a small spring rising very near the Bristol Channel, but instead of flowing northward, the few miles necessary to reach that channel, the river flows nearly in a southern direction. The early portion of its course is not so much distinguished for its beauty as the latter portion; and we may pass over it until we come to the neighbourhood of Werrington. Werrington is the name of a parish, of a town, and of a seat belonging to the Duke of Northumberland. The seat is on the western side of the river, and was formerly possessed by a Sir Francis Drake, who sold it, in 1651, to Sir William Morrice, a kinsman of General Monk. These gentlemen were very active in forwarding the Restoration of Charles the Second, on whose landing at Dover, Mr. Morrice received the honour of knighthood. He was afterwards appointed secretary of state; but preferring the quiet of country retirement, he withdrew to Werrington in 1668, where he built a handsome library. He died in 1676. A descendant of this gentleman sold Werrington to the Duke of Northumberland. The situation of this mansion is very beautiful, commanding a richly diversified and expansive view of a well wooded park, with the river close at hand, and the Dartmoor hills in the distance.

The river next passes not far from the town of Launceston, the county town for Cornwall. This town is distinguished for its castle, a structure whose mouldering walls enclose a large extent of ground. The principal entrance was from the south-west, through a fortified passage upwards of a hundred feet in length, and ten in width. The court of the castle was a square of 136 yards, in the south-west angle of which was a very strong round tower, from whence a terrace proceeded to the keep or citadel. This keep

was an immense artificial conical hill, nearly ninety feet in perpendicular height, about three hundred feet in diameter at its base, and ninety-three at its summit. The walls surrounding the castle court were of immense thickness. This castle is supposed to have been built by William Earl of Moreton and Cornwall, in the reign of William the Conqueror. As our present object is more the banks of the Tamar than the towns near it, we shall pass on now without further notice of Launceston.

After passing at no great distance from Lifton, Bradstone, and Dunterton, the Tamar enters the beautiful grounds of the Duke of Bedford, at Endsleigh Cottage, Milton Abbot. This used to be called Inneslegh, and was an ancient possession of the Abbots of Tavistock, who had a park here in the reign of Richard the Second, and to whom it had been granted by the family of the Edgecumbes. After the dissolution of monasteries, all the estates of the Abbey of Tavistock fell into the hands of the Russells, Dukes of Bedford, who have retained possession ever since.

The estate runs on both sides of the Tamar, and in 1810 the noble possessor began the erection of a sweetly picturesque cottage, under the management of the late Sir Jeffrey Wyatville. The grounds are entered by a rustic lodge; and a carriage road leads through the plantations and lawn to the cottage, the gabled roofs, tall chimneys, and transom windows of which, remind the spectator of the mansion of past ages. It stands upon a pleasant slope, descending to the banks of the Tamar. In the grounds is a grotto, commanding a view of the woods and meadows on the river's bank, and also of a floating bridge, managed by a rope and windlass. The woods in the neighbourhood rise in very picturesque form from the water's edge, and are pierced by ascending walks, one of which leads to a little building called the Swiss cottage, a picturesque edifice in the midst of a sort of Alpine garden. An exterior staircase and gallery lead to the upper apartments, which are furnished, in the Swiss fashion, with wooden chairs and platters, horn spoons, &c. From the gallery of this cottage an extensive view is obtained over the river, woodlands, and open downs. At no great distance are seen rocks, woods, abrupt declivities, and the river foaming over rude masses of stone,—forming altogether a highly beautiful prospect.

After passing near Sydenham, the Tamar arrives at Weirhead, where it first begins to be navigable. At this point the waters of the Tamar fall over a ledge of rocks in a rapid and sparkling cascade. When the stream of the Tamar has been swelled by heavy rains, this fall is highly picturesque.

> The gentle Tamar: leading on his flood,
> Swelled by auxiliar streams, he strays awhile
> Amid the lawns of Werrington, and laves
> Thy ancient walls, Launceston. Thence, in deep
> And silent course he seeks thy leaf-clad bridge,
> Romantic Greystone, murmuring gently through
> Thy ivied arches. With the ocean tide,
> Seeking proud union then, the tranquil flood
> Rolls on, till smoothly, musically, leaps
> The bright, descending river o'er the Weir.
>
> Carrington.

It is customary for pleasure parties to take a trip up the river, from Plymouth and Devonport to Weirhead, the whole distance presenting scenes of great beauty.

Near the Weirhead is a spot which has acquired great celebrity as the Morwell rocks, from the lovely prospect, and picturesque situation. These rocks rise several hundred feet from the river, and whether viewed from below, or the surrounding scenery viewed from the summit of the rock, the scene is equally attracting. On leaving a neighbouring down, a narrow track leads through a copse to the summit of the cliffs. This gradual ascent to a great height makes the traveller scarcely prepared for the scene now presented to his view. The winding river is seen far beneath, and the surrounding prospect includes Calstock Church, Hengeston Down, and the mining district of Gunnis Lake. There is one particular rock called the Chimney Rock, which is mounted by the assistance of a flight of rude steps. Beneath this rock the river is for a time invisible, as it flows through a short natural tunnel. Mr. H. E. Carrington, the son (we believe) of the poet, thus speaks of the scene which presents itself to a spectator mounted on the rock:—

> The repose of the scene is most interesting—undisturbed, except by the whisperings of the breeze,—the scream of a lonely hawk,—or the faint note of some woodland chorister. At an immense distance below the rude platform on which you stand is an extensive expanse of wood,—a perfect forest, stretching from the top of the slope to its base, and thence across the whole extent of level land on the eastern bank of the Tamar. Looking southward, you behold the river, winding away amid flat meadows, backed by the lofty ridge on which stands the exposed church of Calstock. On the left bank is a continuation of the Morwell wood, divided from the river by one solitary strip of rich meadow. The many sequestered cottages which are scattered around strike the eye by their peculiar neatness and air of deep seclusion. The base of a part of the wooded precipice on the Morwell side is washed by the Tamar, which here makes a sudden bend round a forest-like peninsula. One cliff rises perpendicularly from the water,—a fearfully impending mass it is when gazed at from below, though, when viewed from the rugged elevations above, it dwindles into comparative insignificance; but if a boat or barge happen to float along at its foot, you gain an idea of its true magnitude.

Near this spot is Morwell House, formerly the hunting seat of the Abbots of Tavistock: from its situation near Morwell Down, and the woods on the banks of the Tamar, it is considered to have been well situated for this purpose. The building is quadrangular, with a large arched gateway in front, ornamented in a similar manner to those of the Abbey.

Below Morwell rocks, the Tamar skirts Harewood Peninsula, a little tract of land so nearly surrounded by the river, that after leaving Calstock Church, and sailing five miles, the traveller again arrives at Calstock village. On this tongue of land is situated Harewood House, which occupies a site traditionally connected with an event in the early history of England; we mean the story of Athelwold and Elfrida, which has formed a theme for more than one of our poets. The outline of the story seems to be this:—King Edgar, having heard of the beauty of Elfrida, daughter of Ordgar, Earl of Devonshire, sent his favourite Athelwold, to ascertain how far report was borne out by the real attractions of the lady. The messenger,—as has happened in more than one similar instance, no sooner saw her, than he fell desperately in love with her: he made an offer of his hand, was accepted, and the nuptials were performed privately. On returning to court, he took care to lower as much as possible the reputed charms of Elfrida, and succeeded in weaning the thoughts of the king from her. Wishing afterwards, however, to make his marriage known, he entreated permission from the king to pay his addresses to Elfrida, on the plea that though she was not worthy of her king, her large fortune would be an advantage to him, Athelwold. The consent was given, and the pair were publicly married, Athelwold, however, carefully keeping his wife from court. The secret was some time afterwards revealed to the king, and he resolved on revenge, for the deceit of his favourite. He proposed a visit to

the lady, in company with the earl: the latter dreaded the result of the visit, but was forced to comply. The lady, when she heard that she had probably been tricked out of the king's hand, felt as resentful as the king himself. She displayed herself to the best advantage, and won the king's affections: Athelwold was sent on a distant errand, and was afterwards found murdered in a wood; and the king then married the widow Elfrida*.

But to return to the Tamar. After skirting Harewood Peninsula, the river passes near Cotehele House, where the woods swell up in magnificent masses, displaying every hue and disposition of foliage. The rocks that line the banks are covered with lichens, and, when the river is calm and smooth, are reflected with great exactness.

Cotehele House is an old mansion of much celebrity, and was erected in the reign of Henry the Eighth. Its appearance is described as combining the features of the English manor-house, and of the feudal castle. There are square embattled towers, massy walls, covered with lichens, dark green ivy, or tufts of moss. Though situated almost close to the river, the mansion is as completely hidden from public observation as if it were in the most sequestered part of the country. The entrance to the house is through a gothic archway, leading into a quadrangular court. The windows are latticed and heavy, and the walls of the apartments are hung about with suits of ancient armour, eleven of which are said to be complete; also with arquebusses, pikes, halberts, swords, bows and arrows, and other instruments of warfare. Stags' horns, and other trophies of the chase, also adorn the hall. The original furniture of the apartments is preserved almost entire and complete, the walls being hung with tapestry,—probably the work of the ladies of the mansion in bygone days. One of the doors, opening from the hall, leads to a large old staircase, surrounded by portraits of the early owners of the mansion. Antique furniture and curious trinkets are to be found in all the rooms;—such as rich old bed-furniture,—ancient china,—a Saxon sword,—a music-book dated 1556,—curiously ornamented brass fire dogs, more than four feet high (there have never been any grates used in the apartments,)—earthenware drinking-vessels of great antiquity, &c. Connected with the house is a small chapel, where divine service used to be performed, and where the armorial bearings of the successive owners are seen emblazoned on the windows. Not far from the house is another chapel, situated on a bold rock that juts out towards the Tamar. It was built in the reign of Henry the Seventh, and has a curious tradition attached to it, with regard to its origin: this, however, we have not room for here. This chapel is very small, and contains several antique paintings and carved work.

* William of Malmesbury relates this story, on the authority of a Saxon song, and it has thus been admitted into English history.

DEMOSTHENES.

Demosthenes, the Athenian orator, was the son of Demosthenes, a rich blacksmith, and born about 380 years before Christ: his mother's name was Cleobule. He was only seven years old when his father died; and his education having been neglected by fraudulent guardians, he applied himself to his studies, with uncommon industry and perseverance, under the care of Isœs and Plato. Like many distinguished lawyers of later days, and of our own country, he had to struggle with serious physical disadvantages. His lungs were weak; and he suffered from an impediment in his speech: but these obstacles were surmounted by indefatigable exertion. One of the means to which he resorted, in order to accustom himself to the clamour of public assemblies, was to pronounce his orations early in the morning by the sea-side, while the waves were beating against the shore: and in order to correct his stammering utterance, he spoke with pebbles in his mouth.

His abilities as a statesman and rhetorician raised him to eminence at Athens, and he was placed at the head of the government. When Philip, King of Macedon, disputed the power of Athens, and threatened the independence of the whole of Greece, by laying siege to Olynthus, Demosthenes roused his countrymen from their lethargy, and animated them against the encroachments of the tyrant. The Athenians accordingly sent out men and money to the relief of Olynthus: but Philip's gold prevailed: the town surrendered to his troops, and was destroyed. The appeals of the orator in exciting his hearers to extraordinary efforts in behalf of their sinking country are of the most stirring kind; and his allusions to their habitual indolence and indifference, in the midst of danger, exhibit on the one hand his boldness, and knowledge of the human heart, and on the other their characteristics of weakness, which were noted on the sacred page* upwards of three centuries afterwards. After describing the amazing success of their enemy, he upbraided them with "going about in the market-place, and asking 'What's the news? Is Philip dead? O no, but he is ill.' And what matters it, if he were sick or dead? Your lethargy, your want of preparation, the neglected state of your navy, would soon raise up another Philip!" But it is not necessary to pursue the history, nor to dwell on the failure of Demosthenes himself, and of his efforts to save his country. Our object is to furnish from his life a lesson of industry and perseverance.

'Twas ruddy dawn! The winds that swept the main
Were gathering strength to vent their rage again;
But 'midst their fitful murmurs, while the deep
Rolled heavily, and lashed the rock-bound steep,
Say who, with head erect, and out-stretched hand,
Paces, with measured step, the pebbly sand?
Who utters bold and thrilling words that fly
Far o'er the billows, and the storm defy?
Whose flashing eyes, whose solemn accents pour
Lightning to lightning, roar to every roar?
'Tis Cleobulè's son! With steadfast gaze
He wisely marks the tide of coming days,
Views in a small dark spot the storm that shed
Its wrath and fury o'er a people's head.
Far o'er th' horizon borne, the scourge comes on,
That storm is War—that spot is Macedon!
Ah, Athens, plunged in luxury and ease,
Who wakes to think on thee?—Demosthenes!
He, leaving all thy sons in sleep reclined,
Holds awful commune with the sea and wind;
Confronts his weakness; labours to compel
His stammering tongue to do its office well;
Instructs his soul and body to await
The war of tongues, the tempest of debate.
Nor vainly; for the day is nigh at hand,
When crafty Philip thunders o'er the land,
By art and arms a sickly conquest gains
O'er yielding Greeks, who blush not at their chains,
But bought, or fear-struck, go the king to meet,
Whilst islands lay their freedom at his feet.
Then poured Demosthenes his soul of fire,
And in deep tones of pity, scorn, and ire,
More fluent than Isœus, (honoured name!
Yet half forgotten in his pupil's fame,)
Kindled a spark in hearts ne'er warmed till then,
And showed th' *Athenians* how they might be MEN.
"Men, men, were wanted! not to lounge, and say,
'Is Philip dead?' or 'What's the news to-day?'
But men in arms! men eager to uphold
Their fanes and hearths, and spurn the tyrant's gold.
Your sloth," he cried, "gives Philip his success:
Up, then, awake, and seek a world's redress.
These doubtful looks, these folded arms, away!
'Tis Constancy and Toil that win the day."
O wondrous force of eloquence, to raise
Reluctant hearts to honourable praise:
Nay more, by gifted industry to frame
A classic model,—Tully's highest aim,—
The growing genius of a Pitt to form,
And gird young hearts to meet the coming storm!—M.

* See Acts xvii., 21.

As the poet Prior was one day surveying the apartments at Versailles, being shown the victories of Louis, painted by Le Brun, and asked whether the King of England's palace had any such decorations,—"The monuments," said he, "of my master's actions are to be seen everywhere but in his own house."

MODERN ROME.

ROMAN PEASANT AND FAMILY.

"ROME, it has been said, is the country of all who have none; but according to the common meaning of the word we do not see how it can be the country of any man. Not that it does not possess something remarkably attractive, though this is felt at first little, if at all. What you experience for some days after your arrival is a profound listlessness, a vague and oppressive burthen on the mind. You stumble on ruins at every step, disturbing the now mingled ashes of the men of all races and countries who, as victors or vanquished, as masters or as slaves, have inhabited this land of grandeur and desolation. Amid this motley heap you can still detect traces of those various nations and ages, and from all this there streams up a sort of sepulchral effluvia that seems to drug and stupify the soul into the dreams of its last sleep. I can fancy people coming here to die, but not to live, for of life there remains hardly a shadow. Movement there is none, save the underground motion of a swarm of petty interests, creeping and crossing each other in the dark, like that of worms in a grave. Both government and people seem like phantoms of the past. The queen city, placed in the midst of a desert, has become the city of death, now reigning in it in all the dread majesty of his power.

Let us see what at this day constitutes the population of this blighted city. A few really Roman families obscurely vegetate in it. All the great names of the middle ages, the Colonnas, the Orsinis, are either extinct or at the point of being so. The nobility of princes and of dukes does not belong to the country, either by the nature of their institution, by the services they have done it, or by their origin. It was an established custom for ages that the Popes should educate and enrich their children, legitimate or not, or their nephews, and too often confiscations, spoliations and rapine, have laid the foundations of these families thus hasting to decay. To an excessive pomp there has succeeded, it is said, an excess of another kind; and that class of society, saddened at once by its recollections of the past and its anticipations of the future, skulks in vast and silent palaces which none can penetrate, and thus creates for itself a solitude in the midst of a solitude. A natural instinct leads all animals to hide themselves as their end approaches.

Adventurers of all nations and all states, monks of all countries, ecclesiastics attracted from all the corners of the world in hopes of advancing themselves, or by the mere necessity of gaining a livelihood;—such is the greater part of the population. Without common ties, without unity, it has a purely passive existence. Without political rights, for of these they know not the name, they have no share, directly or indirectly, in the government or the administration. Every man lives for himself, and hence, religion apart, the object of life is, with some, the gross one of lucre, and, with others, of present enjoyment. Repose, indolence, and sleep, broken in upon at times, by exhibitions addressed to the senses; such is happiness in the view of men, in whom, nevertheless, may be found the germ of loftier and stronger feelings. As if in mockery of ancient Rome, a Senator, as he is called, holds I know not what petty court of first resort, and on the palace of the Governor, who is always a prelate, you read the renowned monogram, S. P. Q. R., the best rendering of which is certainly the French one, *Si peu que rien* *.

Rome long preserved a portion of her ancient spirit and institutions, modified by the genius and manners of the Middle Ages; and in these the Popes found obstacles in the way of the consolidation of their temporal domination. Down to the sixteenth century they had to struggle with the power of haughty barons and with the remains of municipal franchises. But it was then that society experienced a revolution. Absolute monarchies arose, that gave the victory to the Popes, and made them sole masters in the issue. Sixtus the Fifth, a despot both by nature and principle, ended by concentrating all authority in the hands of the clergy. The Pope, and under him the sacred college and the prelacy, are now the exclusive depositories of political power, and administrative and judicial authority. They in fact form the state; all the rest pay and obey. Thus the Romans are governed, have their public affairs administered, and their law-suits determined, by strangers, inasmuch as, not to mention the Pope, the cardinals and the prelates are almost all connected with Rome only by those casual events which bring them there from all parts, not only of Italy, but of Europe. Can this be

* S. P. Q. R., *Senatus Populus Que Romanus*; the Senate and People of Rome. *Si peu que rien*, as little as nothing.

called a people? Can it be said that Rome is now the country of any one?

And yet this singular city, the focus at different periods of the most enormous political and moral corruptions, is not the less, we repeat, a powerfully attractive place, presenting, as it were, the ghost of a vanished world. From the gigantic buildings ascribed to the Tarquins, down to the palace Braschi, every age has left its impress on a soil, raised by an accumulation of ruins, and forming a vast burying-ground where sleeps a long succession of generations. Aye, each lies there, under its own tombstone, more or less defaced, and the passing stranger who stoops to read the inscription, on discovering but half obliterated lines and illegible letters, walks on oppressed by a load of grief, for he has seen how vain and fleeting at the best is the glory of man. During his few brief days on earth, he erects proud structures on the banks of the stream of time; these he imagines will perpetuate his memory; but the stream, as it flows, undermines them by degrees, and sweeps them at last into oblivion.

The religious associations of Rome, the tales of umes gone by, recalled by so many Christian monuments, cannot fail to make a powerful impression on believing minds. How can such fail to be deeply moved amid the catacombs which once were the St. Peter's church and the Vatican of that glorious epoch, when the bishops of Jesus Christ, having the bones of the dead for their altars, and a vault under ground for their palace, celebrated the sacred mysteries by the gleam of a poor lamp, and, after the strength-giving prayer, told the faithful that if they wished to regenerate the world, they must learn to suffer and to die?

Both within the city and in the neighbourhood you are struck with a multidude of objects which all tend to awaken the same feeling that so naturally affects you in the silent and sombre crypts where Christianity first struck root under persecution. Yet the charm that Rome inspires has a wider cause. It acts even on men who have lost their faith, and on those who never had any. It is the charm, as it seems to us, which a man ever finds in what presents to his mind a lively picture of his grandeur and of his frailty. Amid these ruins heaped upon ruins, there is a marvellous poetry of the past; and in the contrast they present to the luxuriance of an ever-teeming nature, there is a something that leads your thoughts to what never passes away, and lulls you into gentle repose in the bosom of a vague immensity.

The part of the city now most inhabited, lies near the Tiber on the Campus Martius. Being intersected by irregular and dirty streets of small size, notwithstanding the number of edifices crowded on so small a space, it wears a general appearance of poverty and dulness. You there see modern times as they were before the middle class, now predominant over the half of Europe, came and fixed itself between the people and the aristocracy. Religion alone lessened without effacing the interval between those extremes in society. Inferior to the palaces, as works of art, the churches belong to a period in which Christian architecture was on the decline. Instead of the ancient cathedral, with its symbolic forms, its vaulted roofs springing aloft till lost to the eye, its arrowy towers piercing heaven like ardent aspirations, its motley ornaments, mysterious lights, and hollow echoes, you find heavy domes, adorned indeed some with admirable frescoes, others with first-rate paintings, and a prodigious abundance of rare marbles, but exhibiting a total absence of all that seizes the soul, and seems to transport it into a higher world."

Such is the doleful description given by De la Monnais, of the inhabitants of the city, which for so many ages ruled as Queen among the nations, and which has so often been drunk with the blood of saints, both before and since the paganism to which she has ever been more or less devoted, assumed a Christian nomenclature, and consummated her criminality by first corrupting the Gospel, and thus offering it in the cup of her abominations, to all the world's inhabitants as the sincere milk of God's word.

MONK WALKING THE STREETS OF ROME.
[From a Roman print.

I DREAMED;—I saw a rosy child
With flaxen ringlets in a garden playing;
Now stooping here, and then afar off straying,
As flower or butterfly his feet beguiled.
'Twas changed;—one summer's day I stepped aside
To let him pass; his face had manhood seeming,
And that full eye of blue was fondly beaming
On a fair loved one, whom he called his bride.
Once more;—'twas evening, and the cheerful fire
I saw a group of youthful forms surrounding,
The room with harmless pleasantry resounding;
And in the midst I marked the smiling sire.
The heavens were clouded;—and I heard the tone
Of a slow-moving bell:—the white-haired man had gone.

WHEN groves by moonlight silence keep,
And winds the vexed waves release,
And fields are hushed, and cities sleep,—
Lord! is not this the hour of Peace?

When Infancy at Evening tries
By turns to climb each Parent's knees,
And gazing meets their raptured eyes,—
Lord! is not this the hour of Peace?

In golden pomp when autumn smiles;
And every vale its rich increase
In man's full barns exulting piles;—
Lord! is not this the hour of Peace?

When Mercy points where Jesus bleeds,
And Faith beholds thine anger cease;
And Hope to black despair succeeds;—
This, Father! this alone is Peace!—GISBORNE.

SKETCHES IN AMERICA.

II.

A VISIT TO THE CITY OF WASHINGTON AND TO THE PRESIDENT OF THE UNITED STATES.

SOME explanation is necessary respecting the subjoined extract, for without a key to the individuality of the writer from whose *Journal* it is taken, there might be a difficulty in comprehending the picture he draws of his visit to the city of Washington, and to the President of the United States.

Mr. W*****, the journalist, was born and bred a quaker; and, like most of the people in the part of Pennsylvania where his family resided, his general pursuits were those connected with farming. Though not deeply imbued with "book-learning," (for in one part of his journal he says he never liked school,) he was considered a man of rather strong intellect, and he became what is popularly termed a "quaker preacher."

In his younger days he had experienced what he considered "an inward call" to visit some of the Indian tribes, a few hundred miles to the west, which he, of course, obeyed; but which, according to his own account, had not been "profitable." At the mature age of sixty, he again felt, or imagined he felt, a similar impulse. But on this occasion it seems his path was not so distinctly pointed out, for his journal shows that he rambled through several of the states, from place to place, "holding forth" wherever he could find "room and an audience;" but, on the whole, this long journey seems to have been rather one of business and pleasure, than of "usefulness." His equipage consisted of a small one-horse wagon—much the worse for age and wear, and the small black mare that drew it, caparisoned in unfurbished trappings, had evidently "seen better days." Equipped in this manner, he set out upon a tour, of which he positively knew nothing—save the beginning; and it is from the pages of the manuscript journal which he kept during the whole of this pilgrimage, and which is now in the possession of the writer, that the following account of his visit to the city of Washington, and to Andrew Jackson, *then* president of the United States, is transcribed:—

"12 month 11th, 1834.—To-day I travelled about twenty miles, and reached the city of Washington. I drove to a large hotel; it was full of other guests. There seemed an immense crowd in and about the house, so I drove to another inn, where I stopped awhile. I afterwards called upon two or three persons—to one I had a letter of introduction, but it proved of little avail. I then called upon some others, but they appeared no better; intolerance overruled better feeling. I called on another family of 'friends'—they were more kind; I informed them *duty* drew me to visit their city.

"12th and 13th.—Spent pretty much of the time in calling on sectarians. Two of them, ministers, were friendly, and disposed to make way for my exercises; but after consultations with intolerants, formerly 'friends', they were advised not to make way for me.—Thus much of proscription on my first entering the city; but there were others to whom I became introduced,—members of congress, clergymen, and other citizens.

"Colonel Lane, whose kindness was great, walked half a mile with me in the evening to the president's house, in the north part of the city, and one mile from the capital in the south part. On ringing the bell, the porter opened the door into a spacious hall,—and after laying aside our cloaks, &c., he conducted us into the parlour where the president and several others were sitting, with their faces towards us as we entered; the fire being on our right hand, and a handsome painting of twins, on canvass, four or five feet square, on our left. *This* for a moment attracted my attention from the president, and every other brilliancy of that elegant apartment. In an instant the president rose from his seat and met us before we had advanced half-way from the door; when Colonel Lane took him by the hand and introduced me to him,—upon which we took each other's hand most affectionately. He said he was glad to see me, and I am sure I was to see him. During these salutations he probably noticed the attractive qualities of the painting that had drawn my attention, for he took me towards it, saying, with emotion, that it had been presented to him that morning—that one of the children was named after himself, Andrew Jackson, and the other, Rachel Jackson, after his late wife. He desired us to sit down on the side of the fire-place next to where we entered. For a minute or two he sat near those he had been conversing with, but left them to sit by us. Opposite the fire hung a large chandelier, there being smaller ones near each end of the mantel-piece.

"We conversed upon different parts of the country I had lately visited, the other part of the company remaining silent: but after sitting a short time they arose and came and shook hands with the president, and departed. When they were gone he arose and said, 'Come, gentlemen, let us sit over on the other side, I think it is more comfortable on the sofa.' We were now unmolested for nearly an hour, during which he was particularly interesting. He said the Indians were an abused and oppressed people,—that they had been defrauded of their rights (naming several instances); and how that many of the *whites* were destitute of principle, and prejudiced against them, and practised all sorts of cunning, in order to extract from them their lands, and the money they annually received from the government. He said that the only way to secure them from being plundered and imposed upon, was for the government to take charge of their lands, and to sell them to the best advantage, without any cost to the Indians, and supplying them with other lands and necessaries out of the reach of the white population beyond the Mississippi; and he concluded many satisfactory observations respecting them by exclaiming, with much emphasis—'I will protect them! I will protect them! I will remove them and promote their civilization.' While he spoke these words he arose to his feet with much energy—and immediately sat down again.

"He next conversed about the United States' Bank—saying it was a monopoly—a vast machine calculated to influence elections,—and making many poor and but a few rich. That it was wholly unnecessary, and of no advantage either to the public or the government. The scarcity of gold proceeded from so much of it being locked up in the vaults of the bank, &c., &c. 'Colonel Lane,' said he, 'when your members of congress return home I wish you to take all the gold you can, that it may circulate among the people, and shew—with other good reasons—that there is no necessity for continuing the United States' Bank.'—Soon after this four or five other persons came in, so we shook hands affectionately with the president, and bade him farewell.

"Colonel Lane afterwards introduced me to Colonel R. M. Johnson, who asked me if I recollected his report, as chairman of the committee, on Sunday mails, saying that it was the first draught. Colonel Lane also introduced me to Barry, the postmaster general, who conversed upon the complaints against his administration of that department. The Hon.

Samuel M'Kean, senator from Pennsylvania, introduced me into the senate chamber, where I remained some time with one of the friendly ministers I met with soon after I got to this city. I stood near him, among other respectable strangers, while he pointed out many of the most interesting members of the senate. Yonder, says he, is Mr. Clay, and I thought he appeared with a mind capable of embracing every subject that could come before that body. That is Mr. Webster, says my friend,—and yonder very interesting looking gentleman is Mr. Calhoun,—and yonder is such and such an one, pointing my attention to several influential members. Many inquired of me after I had left the senate, what I thought of several of its members, and amongst others, what I thought of Van Buren. Extraordinary as it may appear, I was free to confess, that I had not noticed him, my sight and mind being directed so exclusively towards those my friends pointed out; but I supposed it must have been Van Buren who sat in the speaker's chair, as vice-president, and who tapped on his desk, when he called the house to order.

"I afterwards called in at the lobby of the house of representatives, where I saw several of my acquaintances, and I may say, that not one member of either house, including the officers of government, up to the president of the United States, showed any disposition to suppress my exercises of duty, in thus visiting the capital of my beloved country; but there were intolerants of another class, and narrow minded sectarians.

"12mo. 20th.—My mind not feeling clearly at liberty to leave this city, endeavours were made by my friends to obtain for me the use of the capitol; but the chaplain and others were not willing to give way, although solicited in my behalf from influential quarters. My friends, however, attended the next day: the chaplain occupied the capitol during the morning; and when he had finished his exercises, without introducing me to the assembly, left the place. The assembly in consequence arose, and became unsettled: but some order and stillness having been promoted, many resumed their seats.

"12mo. 22nd.—Parted with several friends at George Town; bidding others farewell at the war and other offices. One of the secretaries told me that he had lately prepared a document for the president's signature, respecting certain commisioners of the Cherokee Indians. The president on looking at it said, it would do all very well, except the words 'if possible,' such words being inadmissible in government-papers;—the secretary said I will erase them,—'No,' said the president;' 'give me the pen; I will do it myself.'

"The building where the departments of state are is about 120 feet long, 60 feet wide, and three stories high. The president's house is about the like size. The treasury department, as well as the general post-office, are similar buildings. Taking leave of my friends at the war-office, I drove along the Pennsylvanian Avenue, probably two hundred feet wide, and proceeded the short distance it is, to the large iron palisading, and through the open carriage-gateway, and round along the handsome circular gravelled way, in front of the president's house, to under an elegant portico. Thus I drove my 'creature' [horse], and carriage, as near to the door as I could of this noble mansion;—built of freestone, I believe, but by paint, or otherwise, made to appear like marble. After my 'creature' was hitched [fastened] to a hook in the wall of the portico, the roof of which projects about twenty feet from the centre of the main building, with columns twenty feet high, and more than twenty inches in diameter, making altogether a handsome appearance. I called, and found the president, and his secretary near him. He arose, and we shook hands affectionately. We then sat down a few minutes, feeling a tender sympathy in the disposition of love. He was smoking his long old-fashioned, clay-burnt pipe, and looking pretty much as the painted representations make him. I had called to see him about a week previous, and though hundreds of persons had called too, he recollected me perfectly. I informed him that my only motive in visiting the city of Washington was under the impression that it was my duty to visit the government of my country. Wishing the blessing of the Almighty to attend him, we shook hands and bade each other farewell. I then entered my wagon, and drove out at the other gate. The space between the gates is a pleasant shrubbery, enclosed with iron palisading,—the space being about ten rods wide.

"The public buildings, and many of the hotels and boarding-houses are noble buildings. The streets are wide and straight, and many of them planted with trees along the sides,—many of them verging off diagonally, and not like the streets of Philadelphia crossing at right angles. But though it is a handsome and growing city, there is a *black* blot in the very heart of it; there I met my fellow-men under the galling yoke of SLAVERY.

"Can such things be? The representatives of a nation of freemen enacting laws in a city where a majority of the human family are *slaves*! shame! shame! upon my country." W. B.

THERE is no God,—the fool in secret said;
There is no God that rules on earth or sky;
Tear off the band that folds the wretched head,
That God may burst upon his faithless eye.
Is there no God?—the stars in myriads spread,
If he look up, the blasphemy deny,
Whilst his own features, in the mirror read,
Reflect the image of Divinity.
Is there no God?—the silver stream that flows,
The air he breathes, the ground he treads, the trees,
The flowers, the grass, the sands, each wind that blows,
All speak of God; throughout one voice agrees,
And eloquent His dread existence shows:
Blind to thyself, ah! see Him, fool, in these.

MILTON'S widow was wont to say that he really looked upon himself as inspired; and his works are not without a spirit of enthusiasm. In the beginning of his second book of "The Reason of Church Government," speaking of his design of writing a poem in the English language, he says; "It was not to be obtained by the invocation of Dame Memory and her Siren daughters, but by devout prayer to that eternal Spirit who can enrich with all utterance and knowledge, and sends out his Seraphim, with hallowed fire of his altar, to touch and purify the lips of whom he pleases."

WHEN foes the hand of menace shook,
And friends betrayed, denied, forsook,
Then Woman, meekly constant still,
Followed to Calvary's fatal hill;—
Yes—followed where the boldest failed,
Unmoved by threat or sneer;
For faithful Woman's love prevailed
O'er helpless Woman's fear.—HANKINSON.

THE noblest Treaty of Peace ever mentioned in history is, in my opinion, that which Gelon, king of Syracuse, made with the Carthaginians. He insisted upon their abolishing the custom of sacrificing their children. After having defeated three hundred thousand Carthaginians, he required a condition that was advantageous only to themselves, or rather he stipulated in favour of human nature.—MONTESQUIEU.

SPITALFIELDS IN 1780 AND 1840.

[Selected from the evidence given before a Committee of the House of Commons.]

IT may appear strange to those whose attention has not been drawn to the subject, but it is nevertheless true, that the origin of many important societies may be traced to the weavers of Spitalfields. The well-known Dollond, sen.*, was a weaver, and Simpson† and Edwards were weavers, and taken from the loom into the employment of government at Woolwich and Chatham, to teach mathematics. Of Simpson the following anecdote is told:—After the publication of his work on *Fluxions*, and while living and working as a weaver in a garret, in Angel-alley, Bishopsgate-street, a gentleman called upon him for the purpose of engaging him as a teacher of mathematics to the cadets at Woolwich. The gentleman gave a lad a few half-pence to find out Simpson, and tell him that a person wished to speak with him. Simpson came down from the loom at which he was working, in a green baize apron, and very meanly dressed. The gentleman said, "I want to see Mr. Simpson;" to which the weaver replied, "I am Mr. Simpson." "But I want to see *the* Mr. Simpson," said the gentleman; "I am *the* Mr. Simpson," was the reply. "But I want to see the Mr. Simpson who wrote the work on *Fluxions*," said the still incredulous gentleman; "I am the Mr. Simpson who wrote the work on *Fluxions*," was the reply; "and if you will come up stairs, I will show you the manuscript at my loom." The gentleman followed him up stairs, was satisfied of his being the right person, and engaged him. On asking him when he would commence, Simpson answered, "When I have finished the piece of goods now in the loom."

The Spitalfields Mathematical Society is second in point of time to the Royal Society, and still exists. There was an Historical Society, which was merged in the Mathematical Society; and there was a Floricultural Society, for a time very numerously attended, but now extinct. The weavers were almost the only botanists of their day, in the metropolis; passing their leisure hours in their little gardens in the environs of London. There was also an Entomological Society, and the Spitalfields weavers were among the first entomologists in the kingdom; this society is likewise gone. They had, too, a Recitation Society, for Shakspearian readings, as well as readings from other authors; and also a Musical Society, though both have long since ceased.

The existence and strong support of such societies, however, as have been described, proves that in former times the weavers must have been in comparatively easy circumstances, and were, for their rank in life, an intellectual body of men. But the weavers of the present day are in a very distressed state, and their moral condition is shown by the extent to which they neglect public worship, which, it appears, only one-sixth of them actually attend. There is a general indisposition amongst them to anything like active mental exercise; but a very common way of spending the Sunday, is to meet together and talk on indifferent subjects, accompanying their conversation with occasionally sipping from a pot of porter

The wives of the weavers not only work during the week, like the men, but, to the great injury of their domestic comfort and morals, have to work on the Sabbath, to clean the house, to wash and to mend the children's clothes, and to attend any other matter left undone during the week. The same causes render it difficult for a weaver to attend to the instruction of his children, a small proportion of whom only are able to read. Book Societies have proved complete failures of late years; the low rate of wages wholly preclude provident habits, although the weavers are, as compared with the rest of the population of the metropolis, decidedly a sober people.

That the condition, religious, moral, intellectual, and physical, of this class of operatives, is of a decidedly lower standard than that of the other trades of their neighbourhood, appears to be an almost universally recognised fact; but though there is reason to fear that this opinion is too correct, there are very many splendid exceptions. Indeed, the instances to be met with amongst this class of labourers of vigorous, self-cultivated, intellectual powers, and an elevated standard of moral and religious feeling, surpass any examples witnessed among persons of a corresponding station in society. And perhaps the causes of this apparent contradiction, in the extremely opposite character of the weavers, may be traced in the nature and character of the occupation itself. To a person of prudence and frugality, and in other respects of ordinary, well-regulated moral habits, there are perhaps few occupations of a similar grade which offer equally favourable opportunities for the developement of a high moral and even intellectual character. The circumstance of the weaver's work being necessarily done at home, in the midst of his family, would appear especially favourable to the growth of the domestic virtues and charities, both in himself and his children. The circumstance of his working by the piece, ensures attention and perseverance in his employment; whilst the nature of the work itself stimulates the mechanical ingenuity of the workman, by its constant demand upon his invention for contrivances to meet the ever-varying patterns. But, on the other hand, the extreme alternations of occupation and idleness experienced in a trade subjected to commercial changes in common with others, and to the caprices of fashion, perhaps far exceeding all other employments; these alternations acting upon persons who are unprepared by moral habits of providence and frugality, to provide for such contingencies, must evidently degrade the great mass of minds which are subjected to its operation.

There are two Savings Banks in this neighbourhood, having a population of about 25,000; but the weavers, and persons engaged in the silk trade, who avail themselves of the benefits of these institutions, do not exceed 400 in number.

* JOHN DOLLOND was born in Spitalfields, in 1706. His father was a poor operative silk weaver, to which laborious business the early part of young Dollond's life was devoted. But even under such circumstances, he contrived to make considerable progress in Mathematics, and various branches of Natural Philosophy, and at length completed some extraordinary discoveries in the theory of light. The results of his scientific labours were communicated in various papers to the Royal Society, of which learned body he was elected a fellow. He associated himself with his son, as an optical instrument maker, and effected some important improvements in the construction of microscopes and telescopes. This was the foundation of the present house of Dollond and Co., the well known mathematical instrument makers of London. John Dollond died in 1761, of an attack of apoplexy, brought on by severe mental exertion.

† THOMAS SIMPSON was born at Market Bosworth, in Leicestershire, in 1710. His father was a weaver, and brought up his son to his trade; but the young man being more fond of books than of labour at the loom, disputes occurred, and a separation followed. He removed to Nuneaton, where he married, and afterwards to Derby, still working at his business for support, though occasionally teaching, and, indeed, at one time, actually professing Astrology and fortune-telling. In 1736, he removed to London, and settled in Spitalfields; where he worked as a weaver by day, and taught Mathematics in the evening. At length his great talents became known, and he was encouraged to write many useful works, which were favourably received by the public. He was elected a Fellow of the Royal Society, and was consulted on the plan for the building of Blackfriars Bridge, respecting which he drew up an elaborate report. He died in May, 1761, in the fifty-first year of his age, and his widow, who was allowed a pension of 200*l.* a year, survived to the age of 102.

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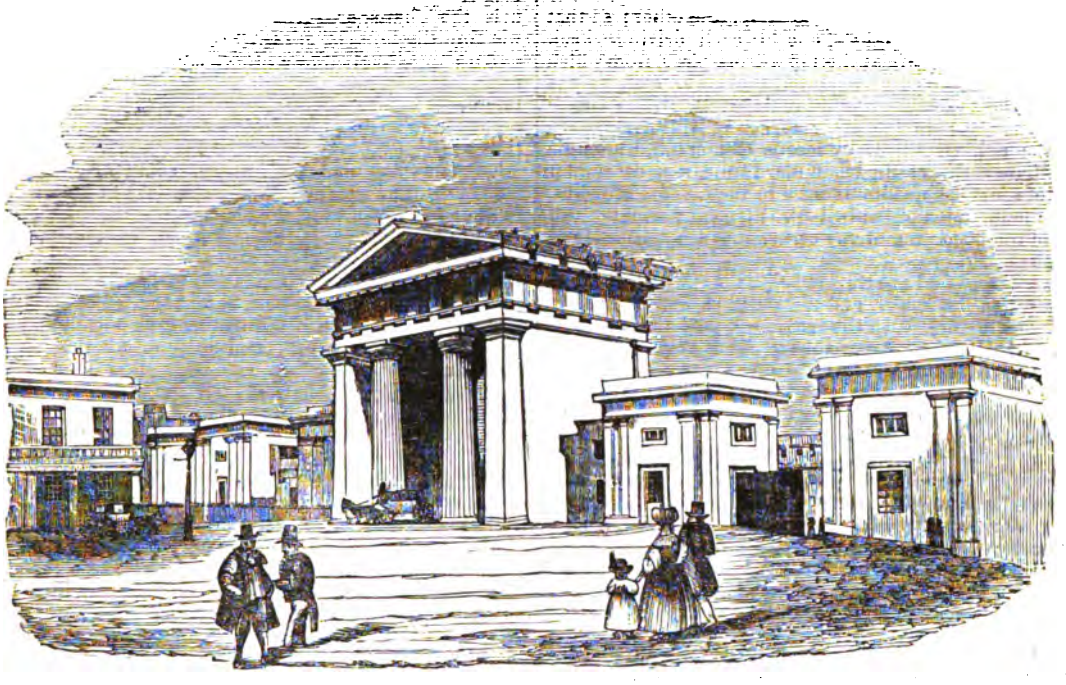
GLANCES AT RAILROAD TRAVELLING. No. II.



ENTRANCE TO THE LONDON AND BIRMINGHAM RAILWAY, EUSTON SQUARE.

NOTHING will serve better to sober down our judgment of what is *great* or *wonderful* among the productions of man, than a review of what has been done in railroads within the last twelve years. Before that period railroads were looked upon by a large majority of persons as insane, impracticable, and visionary schemes which would never be brought into successful operation, and that a well-built coach driven ten miles an hour was a noble instance of swift travelling. At present, instead of deeming railroad schemes insane, impracticable, and visionary, we regard them as splendid monuments of engineering ability, and as being one among the means by which the social and commercial relations of life may be benefited. Twenty years hence we may perhaps look back with a smile to the time when locomotive carriages travelled on our railroads at the rate of *only* five-and-twenty miles an hour. Such are the changes in our feelings and opinions, when we become accustomed to any particular state of things; this ought to teach us, while we properly appreciate the labours of those who have benefited society at large, not to have a too great fondness for things to which we have become accustomed, to the exclusion of changes which may turn out to be valuable improvements.

We have been led to these remarks by considering the astonishing extent to which railroads have been carried since the completion of that from Liverpool to Manchester. Numerous lines now traverse the country in various directions, and many more are in progress. In the Supplement for October, after a brief account of the origin of railroads, we detailed the history and progress of that from Liverpool to Manchester, with a description of which we concluded. On the present occasion we propose taking a glance at a *portion* of what has been since done; we say a *portion*, for the whole would occupy several Supplements.

The first thing that strikes us is the undisputed establishment of a *steam-engine* as the source of locomotive power. It will be remembered that in the former Supplement we stated that it was only after a series of experiments that the adoption of steam locomotive engines was resolved upon on the Liverpool and Manchester railway. Since that time every railroad has adopted similar locomotive power; and as we did not on the former occasion describe the mode by which the steam-engine is thus applied, we propose to do so now, previous to detailing the progress of other railroads.

RAILROAD LOCOMOTIVE ENGINES.

WE must beg our readers to refer to the Supplement for last May, on Steam Navigation, by which a general idea of the action of the steam engine will be obtained. The Supplement for October will also furnish a few elucidatory details. What we propose at present is to show how the steam-engine is made to turn the *wheels* of a locomotive carriage, as the whole progress of the railroad train depends thereupon.

The figure in page 164 will give a general idea of the appearance of a locomotive engine, such as are now employed on our railroads. We observe a strong cast-iron frame A A, supported on four wheels, of which the two hinder and larger are called the *driving-wheels*. On this carriage rests the *boiler*, B B, which is cylindrical in form, and is made up of plates of wrought iron. The furnace or stove is at the hinder end, and the chimney in front. The former is a cubical iron box, the lower part of which is seen at C; its sides and top are double, containing between them a layer of water about three inches thick, which is constantly replenished by water descending from the boiler; for, as the top of the stove is rather below the level of the water in the boiler, this layer of water is always preserved of the same thickness, and the steam as it is generated passes up into the boiler. The smoke and hot air from the fire escape into a number of small tubes, (of which there are about ninety,) which completely traverse the lower half of the boiler, on their way to the chimney; so that nearly all the heat, smoke, and hot air from the furnace, are turned to the useful purpose of assisting to heat the boiler; and the draught is increased by the waste steam being projected up the chimney. Any pieces of ignited fuel which may be carried up with the draught are prevented from escaping into the air and

doing mischief, by a wire-net capping on the top of the chimney.

At K is the *throttle-valve*, which is moved by the engineer, by the aid of a long rod, F F, so as to regulate the supply of steam, and consequently the speed of the engine. From this valve the steam passes by a large tube into the valve-box, G, and thence into the top or bottom of the cylinder, to work the piston; it then escapes by the pipe H into the chimney. The cylinder in this engine preserves its usual upright position; but in other engines almost every variety of situation and position has been tried for it; it has been placed horizontal, inclined, and vertical, with the piston-rod pointing in various directions.

Of course all the apparatus shown in our figure, on one side only of the boiler, is repeated on the other; so that there are, in fact, two engines, one for each driving-wheel. Each piston-rod, I, bears at the top a cross-piece, from which hangs a rod, connected by a joint at the lower end, to one corner of the moveable iron triangle, K K, whose centre of motion is at L; to the other corner of this triangle is joined the rod, M, which, by means of a crank, works the wheel. The action of the triangular frame, K K, is similar to that of the brass quadrants used at the corners of rooms, to alter the direction of the bell-wire; it converts the vertical motion of the piston-rod at one corner into a horizontal motion at the other.

The water and fuel are carried behind in the first carriage, which is called the *tender*, and the water is drawn through the feed-pipe by means of the horizontal pump, B, which is worked by having its rod attached to the triangle at K. At N are the handles of two levers, by which the course of the steam may be so altered as to reverse the action of the engine, and consequently of the wheels, so as to move the engine backwards or forwards at pleasure.

This, then, is the arrangement of parts by which the steam-engine becomes the source of motion to the train moving along a railroad; for it need hardly be said that, when the engine itself is in motion, nothing is more easy than to communicate that motion to a train of carriages, by hooking them to the locomotive carriage.

This, then, being the grand source of motion in all our railroads, we proceed to notice the

LONDON AND BIRMINGHAM RAILWAY.

The bill for empowering a company to construct a railroad from London to Birmingham met with a very powerful opposition in the House of Commons, in 1832; it, however, passed through that house, but was rejected by the House of Lords. In the following session the projectors were more successful; and the bill received the royal assent in May, 1833.

The capital which the shareholders were empowered to raise among themselves, by subscriptions of 100*l.* per share, was 2,500,000*l.*, a sum which, according to the calculations made by the engineers, would greatly exceed the outlay. That engineers make gross mistakes sometimes in their estimates of the probable expense of a great undertaking is well known; nor should we be justified in viewing in too severe a light the miscalculations thus made; but rarely has there been an instance in which the expense has exceeded the estimate by so large a sum as is the case with respect to the London and Birmingham railway. In February last the directors drew up a report, in which the total amount of money received was 5,276,457*l.* 5*s.* 8*d.*; of which had been expended 5,018,816*l.* 16*s.* 3*d*! The expense of obtaining the act of Parliament alone was above seventy thousand pounds; and the price paid for land and compensation to inhabitants, &c., was more than six hundred thousand pounds. The extra capital required, beyond that allowed by act of Parliament, has been provided for by means of loans, taken upon debentures at a favourable rate of interest, charged on the general income of the company.

The works were commenced in June, 1834; and by July, 1837, twenty-four and a half miles at the London end were opened to the public; on October the 16th, in the same year, it was opened to Tring, thirty-one miles and three-quarters; on April the 9th, 1838, to Denbigh Hall, forty-eight miles, and from Birmingham to Rugby, twenty-nine miles. Finally, on the 20th of August, 1838, a large party of directors and shareholders left the Birmingham station at half-past six in the morning, and travelled along the whole extent of the railroad to London, performing the whole distance of 110 miles in five hours; and on the 17th of September it was opened to the public.

Before we ask the reader to accompany us in a trip along the railroad, we will say something of its general construction. The line commences at Euston-square, and passes near Harrow, *Watford*, Boxmoor, Berkhamstead, *Tring*, *Leighton*, *Wolverton*, Roade, Blisworth, *Weedon*, Crick, *Rugby*, Brandon, *Coventry*, Hampton, to *Birmingham*; there are stations at all these places, those in italics being first class stations. There were originally to have been eleven *tunnels*, but the number has been reduced to eight; viz., the Primrose Hill, 1164 yards; Kensall Green, 322 yards; Watford, 1719 yards: Northchurch, 345 yards; Linslade, 372 yards; Stowe Hill, 418 yards; Kilsby, 2398 yards; and Beechwood, 600 yards. The greatest width of the tunnels within the walls is twenty-four feet; the greatest height above the rails twenty-two feet: in most of the tunnels the shafts, or vertical openings, originally made for working the tunnels, are the same now used for ventilation.

An approximation to a level for the railway was obtained, as usual, by cutting through hills, and using the earth taken therefrom to form embankments. The width of the embankment on the top, and of the excavation on the bottom, is thirty-three feet. The greatest height of an embankment is forty-five feet, and the greatest depth of an excavation sixty-five. The greatest slope of the sides of the excavations is as twelve to four, and the least as three to four. The number of embankments is 130, and of cuttings about the same; the greatest length of any one of the former being about a mile and a half, and of the latter two and a half. At the bottom of each embankment, and at the top of each excavation, there is a space of ten feet on each side, to allow of a hedge, a post and rail, and a ditch for the purpose of draining.

The most formidable works on the line, from the great difficulties encountered in quicksands, water, &c., were the Kilsby tunnel, and the Blisworth cutting, which last averaged about fifty feet in depth for two miles, and from which 1,200,000 cubic yards of earth were taken. The total quantity of earth excavated along the line is about 15,000,000 cubic yards averaging 130,000 per mile.

The span of the bridge where the turnpike and other roads pass *under*, and the width between the parapet where they pass *over* the railroad, is in no case less than fifteen feet, and the arch is about sixteen feet in height. In some few cases the railway passes on a *level* across a road not much frequented. In such cases gates are erected, and policemen stationed; the gates being so contrived as to close either across the railway or across the road. When a railroad train is approaching, the gates are closed across the road; and as soon as the train has passed, the gates are shut across the railway, and the communication by the road again opened. In order to give notice to the policeman of the approach of a train, the engineer sometimes makes use of a steam whistle, which consists of a pipe or whistle attached to the engine, and through which steam from the boiler is allowed to pass, thus producing a similar (but more powerful) effect to the blowing by means of the breath.

We must now leave the mere formation of the road-way, and shortly speak of the very important subject of the *rails*. The reader must not suppose that the iron rails merely lie along the ground, with a slight mode of fastening: on the contrary, the preparatory arrangements are both extensive and difficult. The rails are supported by iron *chairs*, and the chairs are fixed either to wooden *sleepers* or stone *blocks*. Considerable difference of opinion has existed, and still exists, as to the relative merits of stone blocks and wooden sleepers; but we believe that in the railway now under our consideration both are used, blocks in the excavation and on the smaller embankments, and sleepers on the large embankments. The sleepers are made principally of larch and oak, and are nine feet long, nine inches wide, and five inches deep. These pieces of wood are arranged lengthwise, end to end, one row under each rail. In those parts where these sleepers are not employed, their place is supplied by stone blocks, two feet long, the same in width, and one foot deep,—some of these fifteen inches deep. They are arranged in a direction diagonal to the rails; and the distance from centre to centre of the blocks varies from two feet and a half to four feet. The stone blocks for the whole line have been estimated at 152,460 tons weight, costing 180,000*l*; the expense being pretty nearly divided into three parts, viz., one third for the cost of stone, one third for the freight from the quarries to the Thames, and one third for delivery on various parts of the works.

On the blocks and sleepers are fixed cast-iron chairs or pedestals, of an average weight of about twenty-five pounds each. They are fixed to the *blocks* by drilling two holes in

each block, into which oak trenails, or plugs, are driven, and a spike inserted through them and the chairs; a piece of felt being placed between each chair and block. The chairs are attached to the *sleepers* by a couple of pins or spikes.

The *rails* are the continuous iron bearing, on which the wheels run. From Euston Square to Camden Town there are four double lines of rails; and two double lines for the remainder of the distance. The *sidings*, or passing-places, with the rails at the stations, &c., increase the total length of railway to 125 miles. The width of each double line of way is five feet, and the central space between the lines, six feet. The rails are made of malleable iron. The rails originally laid down on the Liverpool and Manchester line, and which weighed thirty-five pounds to the yard, were found insufficient to bear the enormous traffic passing over them. Those of the London and Birmingham have therefore been made more massive: ten miles of road are laid with fish-belly rails, (so called from the convex form of their lower edge) at fifty pounds to the yard; twenty-five miles with parallel rails, at sixty-five pounds to the yard; and the remainder with parallel rails, at seventy-five pounds to the yard. The rails are raised above the ground rather more than an inch; and the weight of iron used for the whole is about 35,000 tons, which cost the company 460,000*l.*

The *inclinations*, or changes of level along the railroad, have been influenced by the natural formation of the ground: here are five ridges or hilly districts, separated by six valleys, between London and Birmingham. These ridges and valleys had to be made as nearly level as could conveniently be done, by excavating the one and carrying a raised embankment across the other. Still however an exact level is rarely attained, the distance being regulated as follows:—thirteen miles are level; fifty-one and three quarters are at inclinations varying from one to fourteen feet per mile; and forty-six and three quarters are at inclinations between fourteen and sixteen feet per mile. The general nature of the level may be judged from the following table:—

Distance from Station at Euston Square. Miles.	*Name of Place.*	*Height above the Sea.* Feet.
1¼ ..	Camden Town station	129
3¼ ..	Brent Valley	112
14¼ ..	Oxhey ridge, near Watford	240
16¾ ..	Colne Valley	229
31¼ ..	Tring Valley	420
54¼ ..	Ouse Valley	259
60¼ ..	Blisworth ridge, near Northampton	398
65¼ ..	Nen Valley	319
77¼ ..	Kilsby ridge, near Daventry	396
91¼ ..	Avon Valley	320
98¼ ..	Reaves Green ridge, near Coventry	377
102¼ ..	Blythe Valley	308
112¼ ..	Birmingham station	328

The Birmingham station is thus nearly 250 feet higher that at London. In proceeding from London to Birmingham, fifty-five miles are ascending, forty-four descending, and thirteen level.

The remainder of our notice of this splendid undertaking may be chiefly comprised in a glance at the principal objects along the route.

The London terminus of the railway is in every way worthy of it. It consists of a noble Doric gateway, resembling the entrance to a temple: the height to the top of the pediment is seventy feet, to which the other dimensions of the gateway are proportional. There are various gates on each side of the grand gateway, for the entrance of vehicles, &c. A station at Euston Square did not form part of the original plan, as it was intended to have the terminus at Camden Town; but as it was deemed more convenient to passengers to be set down nearer the heart of town, an extension of the railway was adopted. The Euston Square station, which occupies about seven acres of ground, is devoted to passengers; and the Camden Town station, containing thirty-three acres, is occupied with buildings for engines, wagons, goods, &c., devoted to the carriage or luggage department.

There is a remarkable circumstance connected with the conveyance of a train of carriages from Euston Square, to Camden Town. Although parliament agreed to the extension of the railway to Euston Square, they refused to allow the smoke of locomotive engines to annoy the inhabitants of the houses near which they passed; another plan had therefore to be adopted. The connexion between the two stations is through a deep inclined cutting about a mile in length, walled up on each side, in going through which the carriages pass under several bridges. There is a stationary steam-engine at the top of the inclined plane; and there is an endless rope, 10,000 feet long and seven inches in circumference, which acts upon two large wheels or cylinders, one at the engine, the other at the Euston station. The train of carriages is attached to the rope at the lower end, and upon a given signal, the wheel or cylinder at the upper end is set in rotation, by which the rope is made to traverse the whole distance and back again, much in the same way as the strap that goes round the wheel of a lathe. The two stationary engines, of sixty-horse power each, draw a train up the inclined plane in three minutes. The engines and the rope together cost 25,000*l.* The two lofty and beautifully-formed chimneys at the Camden Town station, belong to the stationary engines employed to work the rope. In proceeding from Camden Town to London, a train descends this inclined plane by the effect of gravity alone.

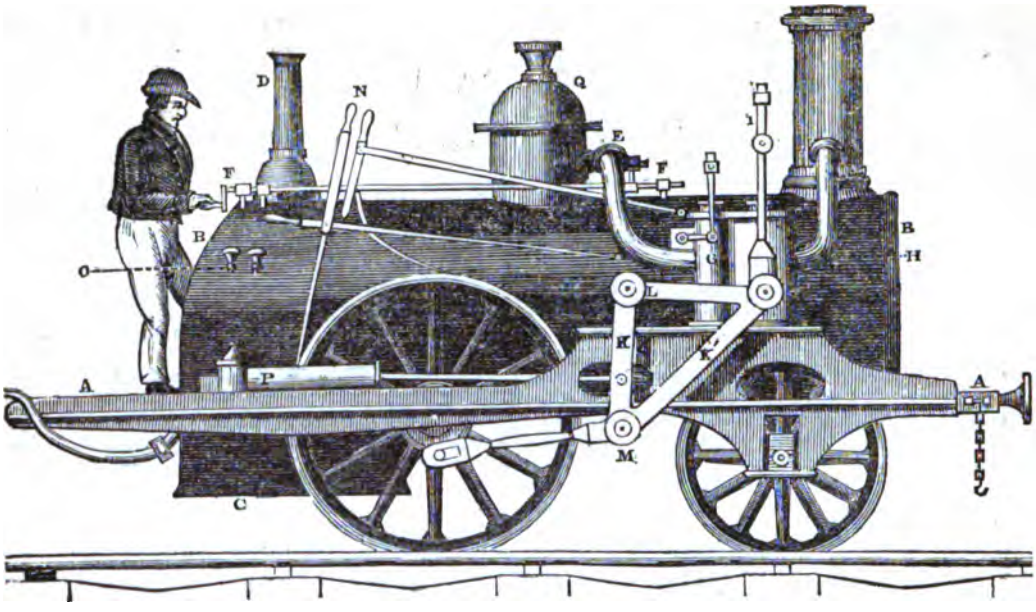
When the train has been drawn up from the Euston station, it is detached from the rope and a locomotive engine, such as we have described, is prefixed to it, and the whole proceed on their journey. The train passes round Chalk Farm, and speedily enters the Primrose Hill tunnel, which is bricked throughout, and ventilated by five capacious shafts. It then crosses the country north of Paddington, to Kensal-green, where it passes through a short tunnel, ventilated by one shaft. At about the sixth mile-stone, the road becomes level for a mile and a half. A little further on it crosses the river Brent, by a handsome bridge of seven arches. Near Harrow is one of the stations for receiving and putting down passengers, &c.; and at about the eighteenth mile is the Watford station, from which omnibuses convey passengers to Watford for six-pence. The railroad then enters a deep cutting which ends in the Watford tunnel; this is ventilated by five shafts; iron gratings are fixed at the top of the shafts, and high walls built round them, to prevent anything being thrown down from above. After passing near the estates of the Earls of Essex and Clarendon, and the paper-mills of Mr. Dickenson, the train arrives at the station at Boxmoor, twenty-four miles from town.

The next two stations are at Berkhamstead and Tring; on leaving the latter of which the railroad enters a deep excavation, which continues upwards of two miles, passing under three bridges; it is between fifty and sixty feet deep, and occupied four hundred men for three years and a half; in the course of it we pass from Hertfordshire into Buckinghamshire. From thence we proceed to Leighton Buzzard, where there is a station, and also a short tunnel, ventilated by one shaft; which is succeeded by a deep excavation through a hard brown stone.

Denbigh-hall, forty-eight miles from town, was, for about half a year, the limit of the railroad from London; the distance from Denbigh to Rugby being performed by coach on the common roads, and from Rugby to Birmingham by the railroad. After passing Denbigh, the railroad passes between Fenny Stratford on the right, and Stony Stratford on the left, to Blisworth; where there is a cutting two miles long and nearly fifty feet deep, through blue limestone rock: this excavation cost 200,000*l.* We next arrive at Wedon tunnel, which passes obliquely under the ancient Roman Watling Street. At a few miles from this we enter the *magnum opus* of the whole railway, the Kilsby tunnel. Nearly six hundred yards of its length is carried through a quicksand; and the constant use of powerful steam-engines was necessary, in order to keep the water sufficiently under to enable the excavators to continue their work: the cost is estimated at 400,000*l.*

The railroad then reaches Rugby station, within twenty-nine miles of Birmingham; and at about twelve miles distance from thence, Coventry station, the intervening road not calling for any particular notice. A tunnel occurs at Beechwood, near Hampton in Arden, beyond which lie the villages of Sheldon and Yardley. After passing over the high road from Coventry to Birmingham, and also passing the entrance to the Grand Junction railway, we enter the town of Birmingham. The Birmingham station occupies an area of about ten acres, and contains all the requisite conveniences for conducting the passenger and merchandise traffic of the company; although in architectural grandeur the entrance is inferior to that at Euston Square.

The receipts of this noble railway have already reached an extraordinary sum per diem. When it was opened only from London to Tring, the receipts averaged 97*l.* per day; when it was opened from London to Denbigh, and from Birmingham to Rugby, the receipts averaged 821*l.* per day; by the end of August, 1838, they had reached 1000*l.* per day; by December, (the whole line being opened,) they



RAILROAD LOCOMOTIVE ENGINE

amounted to 1500*l.* per day; by the end of last May, they were about 1800*l.*; and they may now be roundly estimated at 2000*l.* per day.

We may fitly conclude our notice of this railway by a few observations on its economy and management. On a passenger entering the London station, he enters a portico, from which admission is obtained to the pay departments, by separate doors, each door appropriated to a particular class of passenger carriages. These doors are opened about an hour before the starting of each train. The fare is paid to a clerk, who gives a receipt ticket; or, if the fare be paid at any of the booking offices, (of which there are several in London,) and a particularly-coloured ticket given the passenger as a receipt, this ticket being shown at the station will admit the passenger: the receipt tickets are not given up until the end of the journey.

The train of carriages about to depart is drawn up alongside a raised stone platform, protected from the weather by a light handsome shed, supported by cast-iron pillars. At a given signal, when the passengers are seated and the luggage stowed away, the endless rope is attached to the engine, and the train commences its journey. At the various stations along the road, clerks, police inspectors, police constables, porters, and sometimes engineers, are stationed, to facilitate the traffic that may occur at each station. Besides the constables placed at the stations, there are others placed at intervals of about a mile or a mile and a half along the whole extent of the line. Each man is furnished with two flags, red and white, during the day, and a lamp at night, which is made to show either a white, green, or red light: the first announces to the engineer of the approaching train that there is no obstruction to its progress, the green colour directs him to slacken the speed of the train, and the red to stop as soon as possible. The flags answer a similar purpose, except that upon seeing the red one the engineer merely lessens his speed, without stopping. The inspector at each station has a certain number of these men under his orders: they are walking backward and forward on their beat, from half an hour before the passing of the first train in the morning, till after the passing of the last train at night. Watch-boxes are placed at intervals along the line, for the convenience of the constables; and the men are sworn in as county constables, to render their powers more efficient.

Here we must close our notice of this noble undertaking; not from lack of materials, but from a desire of briefly describing one or two others of our great railways.

GRAND JUNCTION RAILWAY.

A RAILROAD from Birmingham to Manchester or Liverpool, or both, is scarcely less important than one from London to Birmingham: because it would become not only the medium of communication between those three important towns, but would also form part of the route from London to Manchester and Liverpool. This circumstance was not lost sight of by railroad projectors, and the Grand Junction railway shows that such a speculation is in every way important.

Although the London and Birmingham railway is the most gigantic, there is a probability that the Grand Junction will excel it as a profitable investment. The engineering difficulties that had to be surmounted were so few, that the cost per mile has been lower than almost any other railway in the kingdom.

In deciding whether this railway should proceed to Manchester or to Liverpool, the happy plan was ultimately adopted of leading it to both, by having its northern terminus at about the middle of the Manchester and Liverpool railway, from which either of those two towns could be reached in thirty or forty minutes. There were three steps by which this has been accomplished. In 1829 an act was obtained for constructing a railway from Warrington to Newton, the central point between Manchester and Liverpool. This is a distance of only four miles and a half, and the capital raised for it was 53,000*l.* In 1833, an act was obtained for a railway from Warrington to Birmingham, under the name of the *Grand Junction Railway*. In 1835, the two companies were incorporated into one, and the whole line, from Birmingham to Newton, obtained the name of the Grand Junction. It is eighty-two miles and a half in length. It commences in Curzon-street, Birmingham, and passes by or near Wednesbury, Walsall, Dudley, Bilston, Wolverhampton, Parkridge, Stafford, Stone, Eccleshall, Newcastle, the Potteries, Nantwich, Sandbach, Middlewich, Northwich, Preston Brook, Frodsham, Runcorn, and Warrington, to Newton; from which, fifteen miles to the right leads to Manchester, and fifteen to the left to Liverpool, by the Liverpool and Manchester railway. From the Newton terminus a farther line of railroad to Lancaster is approaching rapidly towards completion, making altogether a line 237 miles in length from London to Lancaster.

The Birmingham terminus of the Grand Junction is 371 feet above the level of low-water mark at Liverpool, so that a general descent occurs from Birmingham to Newton. From Wolverhampton to Stafford, fifteen miles, there is a fall of 157 feet, or ten feet and a half per mile; from Stafford to Whitmore, fourteen miles, there is a rise of 116 feet, about eight feet per mile; from Whitmore to Warrington, thirty-five miles, there is a descent of 331 feet, nine feet and a half per mile; and from Warrington to Newton, four miles and a half, there is a rise of sixty feet, or nearly thirteen feet per mile. A notable circumstance connected with this railway is, that there is *no* tunnel of any considerable length, a point equally pleasing to engineers, shareholders, and passengers; and what is especially creditable to the engineer is, that the whole undertaking was completed within the estimated expense, viz., a million and a half sterling, less than one third the expense of the London and Birmingham, which is only thirty miles longer.

On leaving the station at Birmingham, the passenger proceeds to the station at Perry Barr, between which and

the station at Pescott Bridge, the railroad passes through a busy coal and iron mining district; there is a handsome viaduct of ten brick arches, with stone parapets, at Ashton, near Birmingham. After passing the Wolverhampton station, we come to the Standeford embankment, the longest on the line, nearly six miles in length; in some places it is thirty-six feet high, and carries the road over thirteen bridges. A little beyond the Stafford station, the railroad crosses the river Sow, and a succession of short excavations and embankments brings us to the Whitmore station, forty-three miles from Birmingham, near which is the highest point on the whole line, the road descending towards Liverpool one way, and towards Birmingham the other. The railroad passes for a time along a level, and then begins to descend an inclined plane to Basford level. There is then a cutting through a kind of bog, somewhat resembling the celebrated Chat Moss: the workmen found great difficulty in making a good sound foundation at this part.

From the Crewe station the railroad proceeds almost in a direct line for five miles; and two branch railroads proceed from Crewe, one on the right to Manchester, and one on the left to Chester. At about sixty-four miles from Birmingham commences the most beautiful portion of the railway. This is the *Vale Royal Viaduct*, over which the line passes for nearly five hundred feet, and beneath which the river Weaver flows through the vale. The viaduct consists of five noble arches, sixty-three feet span, and sixty feet high, with a height of twelve feet more to the top of the parapet; making the total height from the water seventy-two feet. The whole pile contains 250,000 cubic yards of stone, which was brought down the river Weaver in flats and barges. At a distance of four miles from thence we arrive at the very extensive viaduct, crossing the river Weaver and the valley of Dutton; it is more than a quarter of a mile in length, about thirty feet wide, and sixty feet high, and consists of twenty arches, each of sixty feet span. Lastly, at about a mile and a half before reaching Warrington, there is a viaduct of twelve arches, which crosses over the river Mersey, and the Mersey and Irwell canal. The two arches in the centre are seventy-five feet span each, that which crosses the canal is forty feet, and the remaining nine are each sixteen feet and a half span. Near this part of the line is also an excavation a mile and a half in length, over which are thrown five bridges.

The railroad finally terminates at Newton, where it joins the Liverpool and Manchester; and travellers proceed to the right to Manchester, to the left to Liverpool, and on northwards to Wigan, &c., according to their destination.

The railway was opened in July, 1837. The receipts averaged 5000*l.* per week during the first nine weeks. But the ultimate rate of receipt will not be known until the completion of other lines of railway, which will tend to make the distance from London to Manchester or to Liverpool somewhat shorter than by the Grand Junction. There are several railroads in a greater or less stage of advancement about the midland counties of England; but our space will not allow us further to allude to them.

LONDON AND SOUTHAMPTON RAILWAY.

This is the only railroad at all approaching completion, which leads to or near the British Channel. It begins at the south bank of the Thames, at a place called Nine Elms, in the parish of Battersea, a short distance above Vauxhall Bridge, and terminates at the beach of the Southampton water. It will, when completed, pass through, or near, Wandsworth, Wimbleton, Mordon, Kingston, Thames-Ditton, Esher, Walton-upon-Thames, Weybridge, Chertsey, Woking, Farnborough, Odiham, Basing, Basingstoke, Worting, Popham, Mitcheldever, Winchester, Twyford, and Bishop's Stoke. It is at present open from London to Basingstoke, and from Winchester to Southampton, and the remaining portion is rapidly approaching completion.

The capital of the company consisted at first of 1,000,000*l.*, divided into 20,000 shares of 50*l.* each; in addition to which, power was given to the proprietors to borrow on mortgage 330,000*l.*; but these sums proving insufficient for the completion of the work, parliament has sanctioned the creation of 16,000 new shares. The nominal capital of the company, on which dividends will be payable, is 1,800,000*l.* which it is supposed will about complete the whole undertaking.

The course of the line from London to Basingstoke is about west-south-west, and for the remainder of the route, about south-south-west; the entire length will be seventy-seven miles. The progress of this railway was at one time much retarded, both from want of funds, and from a certain state of disfavour into which the undertaking had fallen in the minds of the public. But as the railroad proceeds towards completion, the expectations of its future profit become raised.

The construction of this railway was given to Mr. Locke, the engineer of the Grand Junction Railway, and has been proceeded with rapidly since there were sufficient funds at command. The line as far as Woking Common, twenty-three miles from London, was opened May 21, 1838. On the 12th the Directors, accompanied by several noblemen and members of parliament, made an experimental trip. On the 19th a second trip was made, when nearly 400 persons, principally shareholders in the company, were conveyed along the line. They were in two separate trains, of ten and nine carriages, and travelled at the rate of nearly thirty miles an hour. During the twelve weeks immediately succeeding the partial opening on the 21st, 93,795 passengers travelled on the railway: the proportion being for the first four weeks, 29,127; for the second four weeks, 31,785; for the third four weeks, 33,083. What gave a stimulus to the subsequent exertions of the company was, that these numbers greatly exceeded the original supposition and expectation.

On the 29th September, 1838, the railroad was further opened to Shapley Heath, thirty-eight miles from London, and only six miles short of Basingstoke; and in the summer of the past year it was further opened to Basingstoke. In a report which the proprietors drew up in February 1839, they say:—"On the line between Winchfield and Basingstoke, and also between Winchester and Southampton, the cuttings and embankments are, with very trifling exceptions, completed, and a considerable part of the permanent road is laid down. This will render available about twenty miles more of the line, in addition to the thirty-eight miles already opened, and leave unfinished only the eighteen miles between Basingstoke and Winchester." This increase of length was effected in June last.

The rails for this railway were originally intended to be sixty-three pounds to the yard; but the weight has been since increased to seventy-five pounds. The general nature of the engineering difficulties to be surmounted has probably been less than in the London and Birmingham railway, and more than in the Grand Junction.

Some dissatisfaction has been expressed at the situation of the London terminus at the southern instead of the northern side of the Thames. This is undoubtedly to some extent an inconvenience; but to have crossed the Thames, or even to have brought the terminus into the busy part of Southwark or Lambeth, would have entailed an expense so enormous as would probably have checked the whole affair. The inconvenience is almost entirely removed by the establishment of numerous little iron steam-boats, which proceed from London and other bridges to the station at Nine Elms, by which a passenger is conveyed for four-pence, almost to the door of the station.

In reference to the Southampton railway, a recent writer has observed:—"In connexion with this railway, a plan has been formed and is now in progress for constructing docks at the town of Southampton, with the prospect of its becoming once more a dock of commercial importance This project was conceived under the impression that the railway system would be so far carried out, as to connect the great trade and manufacturing stations of the midland and northern counties with the southern coast, when the advantages as a port of shipment presented by Southampton in preference to London would be sufficiently apparent. It was also imagined that Southampton being brought by means of its railway within three hours and a half (it is thus we must henceforth speak of distances,) of the Metropolis, might become, in some degree the port of London, for ships arriving from and sailing to the westward. Vast as is the consumption of foreign and colonial goods in London, by far the greater part of those goods which now ascend the Thames are distributed afterwards to various, and frequently distant, parts of the country. The anticipated formation of railway lines would allow of this distribution being better made in many cases from Southampton, and it is agreed on all hands that the advantage to the owners of ships from terminating their voyage at Southampton, rather than proceeding through the Straits of Dover to the Thames, would be exceedingly great. The expense, both in time and in money, that would thus be saved would be so much gain to the country at large; and apart even from this consideration, it would appear requisite to look around for means of relieving the Port of London from some part of its con-

stantly growing traffic. The docks, which have been constructed since the beginning of this century, have not had the effect of keeping the course of the river free, so that accidents and loss of life are constantly resulting from its crowded state. Almost every spot adapted for the purpose has already been converted into a dock; and as there is no appearance, and indeed no desire, that the causes which have led to the aggrandizement of the metropolis should cease to operate, the necessity for some such relief as that above mentioned is continually growing more urgent."

It appears to us probable, that if capitalists would venture upon a railroad from Southampton to Bristol, such a line of communication would be established from the British Channel to the northern districts as would, in connexion with the present line from Southampton to London, make the establishment of docks at Southampton a project of great national importance.

We must conclude our notice of the Southampton Railway (whose name has recently been changed to the *South* Western) by stating that the receipts are steadily increasing; and that, although the middle part of the railway is not yet opened, the receipt of money exceeds most of the estimates given at the outset of the undertaking. In the month of June last, the proceeds were as follows:—the week ending June 2, 2219*l.* 14*s.* 0*d.*—week ending June 9, 2200*l.* 13*s.* 0*d.*—week ending June 16, 2762*l.* 1*s.* 0*d.*—and week ending June 23, 2954*l.* 12*s.* 0*d.*

GREAT WESTERN RAILWAY.

No railway has encountered so much opposition, or led to so many conflicting opinions, as the Great Western Railway, intended ultimately to extend from London to Bristol. This has been occasioned by two or three different circumstances,—the very large outlay required, the engineering difficulties to be overcome, and certain modifications which the skilful engineer, Mr. Brunel, has made in the usual modes of proceedings.

An act was obtained in 1835 for making a railroad from London to Bristol. It was at first intended that this line should be connected with the London and Birmingham railway at Kensall Green, four miles and a half from Euston Square; but as certain negociations between the two companies were not satisfactorily terminated, they were broken off, and the new company had therefore to extend their railway to Paddington, where the London terminus now is. From Paddington the line passes either through or near Acton, Ealing, Hanwell, Southall, Slough, Salthill, Maidenhead, Reading, Didcot, Wantage, Farringdon, Swindon, Wotton-Basset, Chippenham, and Bath, terminating in the depôt at Temple-mead, adjoining the floating harbour, at Bristol.

The aspect of the country, with respect to *levels* is this: From London there is a gradual rise in the road to Maidenhead, Reading, and Didcot, by very easy ascents, always within four feet per mile. From Reading to Swindon, the rise is about six feet per mile. There is a level at Swindon, the spot being seventy-six miles from London, 253 feet higher than the Paddington terminus, and 276 feet higher than the Bristol terminus. Between Swindon and Bath, the descent averages about six feet and a half per mile, with the exception of two short inclined planes at Wotton Basset and Box, in which the descent is fifty-three feet per mile. The descent is pretty uniform from Bath to Bristol, at the rate of four feet per mile. Taken altogether, this railroad is considered one of the most favourable in respect to level.

In regard to *tunnels*, it presents one of the most gigantic specimens of engineering, or rather of sheer manual labour, that our railroads have yet exhibited—we mean the *Box tunnel*. This tunnel had to be excavated for a mile and three quarters through a hard rock, principally of limestone. The tunnel will be thirty feet wide and thirty feet high, and the stone is so firm and compact as to be able to retain the form of the arch without brickwork.

According to the plans sanctioned by the act of parliament there were to have been seven tunnels, amounting together to rather more than four miles in length; but through some deviation in the route, the number has been reduced to five, of which three are between Keynsham and Bristol. There is no tunnel from London to Corsham, a distance of nearly a hundred miles.

One of the important changes which Mr. Brunel has introduced in the construction of this railway, is in the foundation on which the rails are laid. In most railways, the rails are supported at their ends by stone blocks; but Mr. Brunel recommended the adoption of rails, in pieces fifteen or sixteen feet long, laid on continuous bearings of wood, carefully *Kyanized*, or protected from dry rot, and firmly secured to the ground by piles. The weight of the rails is forty-three pounds per yard, the average weight of those used when stone blocks are employed being sixty-three pounds per yard. The expense attending the original formation of the road upon this plan very much exceeds that of the old method; but the expectation of the engineer is that this excess in the cost will be amply repaid in the first few years of working by the diminution in the cost of repairs.

Another deviation from the usual plan consists in placing the rails seven feet distant, instead of four feet eight inches. It was considered, that being able to place the body of the carriage between the wheels instead of above them as in other instances, wheels of much larger diameter might be employed; by the same arrangement the driving wheels of the engines might also be much enlarged; the advantages derivable from these circumstances were expected to be, that a much higher velocity might be attained: and that increased steadiness and safety would result from the wider basis.

Nothing can exceed the violence with which these "innovations" as they were termed, were received by a portion of the shareholders. The engineer had not only the common engineering difficulties to surmount, but also those arising from the opposition of a portion of his employers. We have neither space nor inclination to discuss all the arguments used on the occasion; but we may fitly give a portion of the report which the directors issued in June, 1838, in answer to some of the objections. The reader will bear in mind that what is here called *packing* means ramming earth or gravel firmly under the longitudinal timbers, on which the rails rest.

"In the first place it may be stated, that one essential part of the operation in constructing the permanent way, is a perfect system of ramming ballast or gravel under the longitudinal timbers, as a means of steady support to them under the pressure of passing trains. It was always stated that the success of the plan depended entirely on this process of packing. It is a matter of general observation, that on some parts of the line, the permanent way firmly resists the pressure of the trains, while on others an uneasy movement prevails. The directors have ascertained, beyond a doubt, that this difference is coincident with those local circumstances which readily account for the defect. Wherever the completion of the rails had enabled the engines to traverse them previously to the opening of the line, (upon which parts, of course, greater time and attention could be bestowed,) the rails answer all the expectations which could reasonably be entertained. The earth under them had been repacked after the engines passed upon the rails; the screws had been tightened with the compression upon them, and the directors consider them to be in a satisfactory state. .....A very uneasy movement in some of the carriages has given rise to a rumour that the plan had totally failed, and the rails must be altered. The directors entertain no such opinion. They are convinced that, as far as the rails are concerned, the remedy can and will be easily administered, by a thorough repacking under the timbers with coarse gravel, which is now in progress, and with a favourable result. It is evident, that in places where sand or light gravel had been used as the material for packing, the resistance was not adequate, and that the substitution of coarse stony gravel has hitherto answered the purpose."

This report failed to satisfy those proprietors who had opposed the great width of the rails, and the continuous timber bearings. The directors therefore appointed two engineers, Mr. Wood and Mr. Hawkshaw, to investigate the whole subject, and report their opinions thereon. Their evidence, given in the month of December, 1838, was very conflicting, but, generally speaking, unfavourable to the system adopted by Mr. Brunel and the directors; amounting, in fact, to a suggestion, that the greater part which had then been done, in respect to rails and bearings, should be undone. It became necessary, therefore, that the directors should come to some definite result. The principal points in dispute were,—the width of the gauge, (that is, the width between the rails), the continuous bearings of wood, the *scantling*, or thickness and depth of the timber, and the employment of wooden piles to support them. On these points, in January of the past year, the directors, "upon a deliberate reconsideration of all the circumstances affecting the permanent welfare of the undertaking, divesting the question of all personal partialities, or obstinate adherence to a system, unanimously acquiesce in the abandonment of the piles, in the substitution of a greater scantling of timber, and of a

heavier rail; retaining the width of gauge, with the continuous timber bearings, as the most conducive to the general interests of the company."

On this determination being read at a public meeting of the share-holders, it was moved, "That this meeting, deeply sensible of the disastrous consequences inevitably arising from repeated discussions as to the principles acted on in carrying on the work, do request the directors to adhere to the principles laid down in the report, as most conducive to the permanent welfare of the proprietors." To this proposition an amendment was proposed, "That the reports of Mr. Wood and Mr. Hawkshaw contain sufficient evidence, that the plans of construction pursued by Mr. Brunel are injudicious, expensive, and ineffectual for this professed object, and ought not to be persevered in." On a division, 7792 votes were given for the report, and 6145 against it.

Thus ended a contest which did considerable injury in many ways to the undertaking. However, the permanent timber bearings and the great width of the gauge are retained, and future experience must decide the question of their superiority over stone blocks and a narrow gauge. Since the decision in January last, the works have been proceeding with great rapidity.

We may now take a short glance at the principal features of the railway. The London entrance to the railway is not far from the west end of Oxford Street. Carriage and foot paths lead from the entrance to the station at Paddington, where there is a very capacious engine-house and carriage shed. Within a short distance of the commencement, the railroad passes under several handsome bridges; one of which, a continuation of the Westborne road, consists of seven arches. From the terminus a cutting commences, about a mile in length, and of an average depth of nine feet. Another cutting, of more than a mile in length, and averaging ten feet in length, carries the line through Wormwood Scrubs. About two miles from Paddington, the Thames Junction railway was intended to cross the Great Western.

Old Oak Common is crossed by an embankment half a mile long, and about twelve feet average depth. We next enter the deepest cutting on this portion of the line, through Acton parish, near Friar's Place, where it is about twenty-eight feet deep. Near to Old Oak Common, there is a private communication bridge across the cutting, with a handsome elliptical arch. After a short level, an excavation, two miles and a quarter in length, commences, through which the line is carried to Ealing: it is about fourteen feet in depth, chiefly through gravel and sandstone. This excavation is crossed by six bridges.

At about six-miles from London an embankment commences, three-quarters of a mile long, which leads to the Wharncliffe viaduct at Hanwell: its depth varies from about fifteen to thirty feet, and the road to Greenford is carried through it under a bridge. The viaduct, including the land-arches at each end, is about nine hundred feet in length. The main arches, eight in number, are nearly semi-elliptical, with a rise of seventeen feet, and seventy feet span. The piers at the springing of the arch are ten feet and a half thick, but wider at their base. This viaduct is one of the most beautiful parts of the whole railway.

An embankment is continued from the viaduct to the Uxbridge road, over which the railway is carried by a bridge of cast-iron. From thence the line passes on to Norwood, upon an embankment of nearly a mile in length, and varying from ten to twenty feet in height, until the natural level of the ground is again attained. From Norwood, through Southall-green to Hayes parish, the embankments and excavations are slight; but at the last-mentioned place an embankment commences, which, for a mile and a half, averages ten feet in depth. In the course of it occurs an occupation bridge, two skew bridges, over the Paddington and Grand Junction canals, and another over Yedding brook. From hence, for two miles and a half, the cuttings and embankments are slight. At West Drayton, about thirteen miles from town, the railroad again crosses the Uxbridge road, by a brick bridge.

An embankment nearly a mile long, and averaging fifteen feet in height, carries the line from West Drayton, over two streams at Thorney Road, and over the river Colne, by two bridges. On entering Iver parish, the line passes through a cutting, of more than a mile in length, and averaging ten feet in depth. We then pass through Langley Marsh parish, and near the village of Slough. From Slough to Maidenhead, the excavations vary from ten to five feet in depth, and the embankment from eight to thirty feet in height; while there are thirteen bridges, passing either over or under the railway. The line crosses the Great Western road at an angle of forty-five degrees, which requires one of those remarkable constructions, a skew bridge. Leaving the turnpike road, an embankment passes by another bridge, over the Taplow road, and the embankment grows deeper as it approaches the Thames, its maximum being about thirty-five feet.

From Paddington to Maidenhead, there are, besides the Wharncliffe viaduct, no less than twelve culverts and covered ways through embankments, and fifty-eight bridges passing over or under the line. The greatest inclination, or *gradient*, on this part of the line, is one foot in 1204, and the least one foot in 2640.

The Thames is crossed by a bridge of brick, consisting of two arches of 128 feet span each; some difficulty has been experienced with respect to this bridge, on account of the temporary settlement or derangement of the arches: indeed the eastern arch had to be rebuilt. Beyond the Thames occur a series of excavations and embankments; there is an excavation at Sonning, and an embankment at or beyond Reading; and the earth taken from the one was intended to be used in the other, but from some delay, a change had to be made in this respect. The middle portions of the railway are either still in progress, or are what engineers call *light*, that is, small embankments and cuttings are all that are necessary. We will therefore not dwell on this part of the line, but will quit it with the remark, that a railway diverges from this line to Cheltenham, at Swindon.

The part of which we shall lastly speak, viz., from Bath to Bristol, is by far the most difficult and gigantic of the whole. "It would be difficult, we believe," says Mr. Herapath, in the *Railway Magazine*, to which we have been indebted for many of the preceding details, "to instance another eleven miles of railway in the kingdom which display such a diversity of character, or greater natural obstacles to be overcome, than the line between Bristol and Bath, whilst the importance of these cities as termini is likewise unrivalled within the same distance out of the metropolis itself. Every variety of work which can be found on the largest railways (with the exception of crossing a moss,) is exhibited in the construction of this short line; and in some parts the works are of a very bold and imposing kind. Within the short space of eleven miles and a quarter, we have depôts, river, road, and occupation bridges, culverts, viaducts, tunnels, covered ways, retaining walls, lofty and extensive embankments, and deep cuttings in earth and solid rock. All these works are necessitated by the peculiar nature of the country, which is hilly and difficult. The only valley in the direction of the line is that through which the river Avon runs from Bath to Bristol; and this winds so much, and is in some parts so narrow, as to render it impracticable for the railway to follow its course for any distance."

The railroad crosses the Avon near Nesthaw Dam, and also near the depôt at Bath, keeping on the south side of it in the intervening distance: it occasionally touches the ground level, and is carried by means of tunnels and excavations through the hilly ridges, which run down nearly at right angles to the river, and by embankments and bridges over the intervening valleys and water courses. The cuttings and embankments nearly balance each other, the former being rather in excess, and amounting altogether to nearly one million cubic yards.

Proceeding from the terminus at Temple Meads, Bristol, the line is carried over a short viaduct to the harbour bridge, from which an embankment leads to the Feeder, over which a bridge is thrown, and another embankment leads to the Avon, over which a bridge of three stone arches is thrown. Proceeding onward, the line arrives at a perpendicular cutting in red sandstone, fifty feet deep and 170 yards long. This leads to the first tunnel, 330 yards long, thirty feet high, and thirty feet wide: this is hewn out of the hard rock, and supported without artificial masonry. On emerging from the tunnel, the line enters a valley, and shortly afterwards another tunnel, about 150 yards in length. There then occurs some deep cutting through solid rock, and a third tunnel, more than half a mile long. On emerging from this, the line skirts the river Avon on an embankment; and then ensues a cutting, half a mile long, and in some places seventy feet deep, through hard sandstone: the sides are nearly perpendicular, and the whole presents a stupendous appearance. There then ensues an embankment three-quarters of a mile long and thirty feet high, during which are two stone bridges and two culverts. This is succeeded by another cutting, and by two more short

embankments; after which comes a cutting, three-quarters of a mile long, and in some places forty feet deep, which leads to the Salford tunnel, 160 yards long.

Thence succeeds a very deep excavation,—then a high embankment nearly two miles long, passing over six bridges,—and then another cutting. Alternations of cutting and embanking follow until the line arrives at the Tiverton tunnel, 260 yards long. At about ten miles from Bristol is the Tiverton viaduct, half a mile in length. Another succession of cuttings and embankments brings the line to Bath.—The Box tunnel, excavated through hard stone, has already been alluded to.

The railroad was opened from London to Maidenhead on the 4th June, 1838; and from then to the 30th September, the number of passengers was 177,774, the receipts being in June, 6459*l.*, in July, 6913*l.*, in August, 7152*l.*, in September, 7579*l.* The velocity was never less than twenty-five miles per hour, and in many cases was above thirty miles. By the month of May in the past year the number of passengers had risen to about 1100 daily; the distance (still only to Maidenhead) being frequently performed in forty-eight minutes. In June, the receipts had amounted to 2000*l.* per week. In July, the railroad was opened nine miles further, to Twyford. During the Ascot races, one of the railway trains conveyed no less a number than 675 passengers, besides some carriages and horses. The daily number of passengers has since approached 3000.

In conclusion, we may say that this immense undertaking (which will cost more than five millions,) bids fair to be one of great importance in a commercial point of view, by bringing London and Ireland practically near each other, as well as in conveying colonial and other produce from Bristol to London.

LONDON AND GREENWICH RAILWAY.

This differs from every undertaking of the kind, in being raised on brick arches the whole distance. It was commenced in 1833, and connects London with the populous towns of Deptford and Greenwich, by a line which shortens the distance nearly one third. It commences south-east of London Bridge, and pursues nearly a straight line to the High Street of Deptford, whence it continues in a gentle curve to Greenwich, at which town there will shortly be a handsome terminus, about 200 yards from the church.

The rails are laid throughout on a viaduct composed of about 1000 arches, each twenty-two feet high, eighteen feet span, and twenty-five feet in width from side to side. This form of construction was rendered necessary by the number of streets over which the line had to be carried, with the traffic through which it would otherwise have greatly interfered. This difficulty might have been overcome by means of an embankment, with arches at the intersections of the streets, but the expense in that case would have been enormous, since the whole of the materials must have been brought from a distance, and the cost of the additional ground that must have been purchased would have been great, as embankments require to be very wide at the bottom. A parapet wall, about four feet high, is built at each edge of the railway; and lamps and milestones are placed at certain distances.

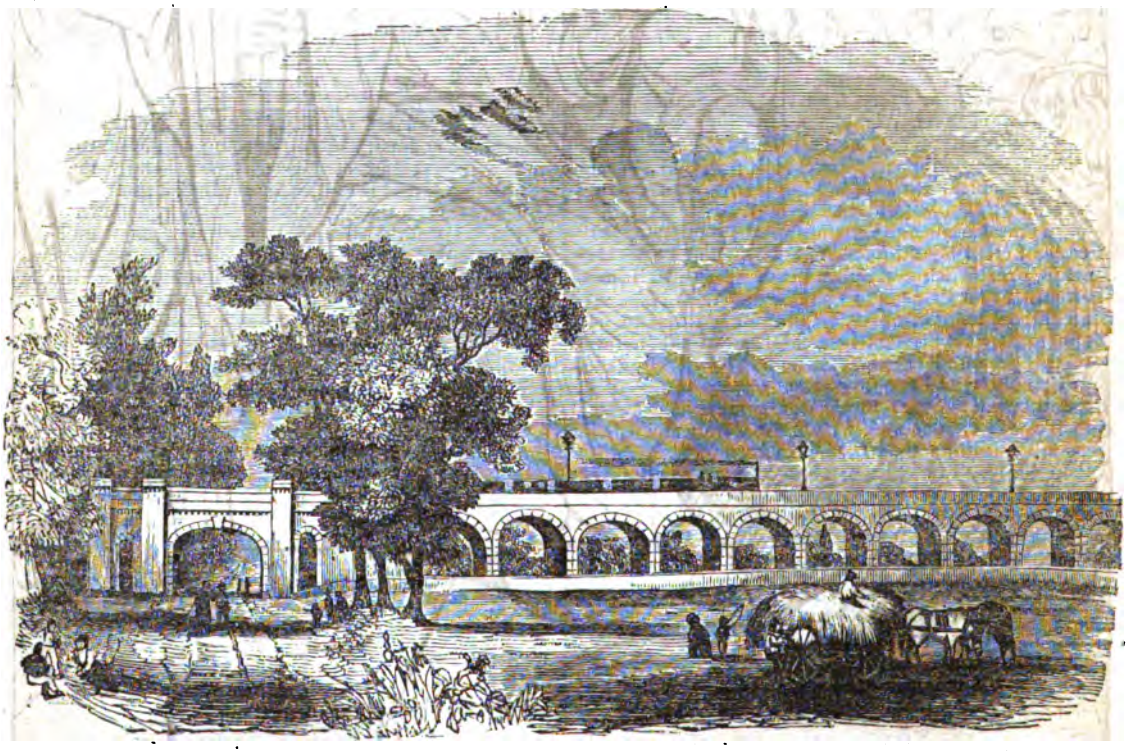
In the early part of 1836 a portion was opened about two miles and a quarter in length. By the end of the year the receipts averaged about 50*l.* per day. The original capital was 400,000*l.*, after which 130,000*l.* were procured on bonds, and in the beginning of 1837, the directors announced that 200,000*l.* more was required. About that period the weekly traffic was between thirty and forty thousand persons.

The blocks for carrying the rails on this railway, are principally of granite, and on these were placed cast-iron chairs. The iron rails weigh about fifty pounds the yard.

No railroad experiences so much the effect of a *holiday* as that from London to Greenwich. Ever since it has been opened the whole distance, it becomes one of the means of transit for the summer visitors from London to Greenwich. During Whitsun week, in the year 1839, the number of passengers was remarkably large: on the Monday, 35,332, receipts, 1227*l.*; Tuesday, 22,877, receipts, 784*l.*; Wednesday, 10,205, receipts, 343*l.*; Thursday, 4634, receipts, 117*l.*; Friday, 3372, receipts, 122*l.*; Saturday, 346*l.*,—making 2941*l.*

There is one circumstance which will always operate in keeping down, in some degree, the number of passengers upon this railway; we allude to the numerous steam-boats that ply every half-hour between London and Greenwich. At the same time it may be regarded as a striking instance of the extent of intercourse between the two places, that steam-boats go every half hour from London to Greenwich, and *vice versâ*, and that railroad trains proceed every *quarter* of an hour throughout the day in both directions.

This railroad, however, has a degree of importance given to it, by being the London terminus of the Croydon, and also of the Brighton Railway, of which one is finished, and the other is rapidly progressing.



VIEW OF THE GREENWICH RAILWAY.

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FROM THE CELEBRATED PICTURE BY BENJAMIN WEST.

BENJAMIN WEST AND HIS WORKS.

I.

"SUFFER LITTLE CHILDREN TO COME UNTO ME, AND FORBID THEM NOT."

THE family of BENJAMIN WEST, a celebrated historical painter of the last generation, was descended from Colonel James West, the friend and companion in arms of John Hampden, a name well known in the troubles of the seventeenth century. This ancestor of West, who belonged to Long-Crendon, in Buckinghamshire, was a descendant of the Lord Delaware, renowned in the wars of Edward the Third and the Black Prince; as the Marquis of Buckingham informed his Majesty King George the Third, at the time of the painting of the picture of the Institution of the Garter.

West was born on the 10th of October, 1738, at Philadelphia, in America; for, though his family was of ancient and respectable standing in England, that part of it to which the painter belonged, had, about the year 1667, embraced Quakerism, and emigrated to America with some other families.

When an individual is born with a peculiar talent for any profession or pursuit, the outbreaks of nature are generally manifested at intervals from the earliest years. The first occasion for the manifestation of the genius of young West, was when he was about seven years old. Being placed with a fly flap in his hand to watch the sleeping infant of his eldest sister, as he sat by the cradle, the child smiled in its sleep: he was struck with its beauty, and having procured some paper, drew its portrait in red and black ink. His mother returning into the house snatched up the paper, which he sought to conceal, and exclaimed to her daughter, "I declare he has made a likeness of little Sally." The drawing was shown to her husband, and the belief recurred to him that the boy would one day be very eminent.

Soon after this he was sent to school, and during his hours of leisure was permitted to draw with a pen and ink. As yet he had never seen an engraving or a picture; for neither these nor professors of painting, were at that time entertained at Springfield, in Pennsylvania, where West was born and brought up.

When, however, he was about eight years old, a party of Cherokee Indians paid their summer visit to Springfield, and being much pleased with the rude sketches which the boy had made of birds, fruits, and flowers, they shewed him some of their own workmanship, and taught him how to prepare the red and yellow colours with which they stained their weapons; and, when his mother gave him a piece of indigo, he was enabled to prepare the different colours necessary for his drawings. But he was at a loss how to lay these colours nicely on, until he was told by a neighbour, that the painters of Europe used brushes made of camel's hair. These being entirely out of his reach, he cut off a quantity of fur from the back and tail of his father's cat, with which he formed pencils. This depredation being frequently committed, his father observed the altered appearance of the cat, and lamented it as the effect of disease, until his son at length confessed the practices he had resorted to.

At length, the genius of young West drew the attention of Mr. Pennington, a merchant of Philadelphia, who sent him a box of paints and pencils, with some canvass prepared for the easel, and six engravings by Grevling. West placed the box on a chair at his bedside, and was unable to sleep. He rose with the dawn, carried his canvass and colours to the garret, hung up the engravings, prepared his palette and began to copy. For several days he omitted to present himself at school, and laboured secretly and incessantly without interruption; but on the complaint of his master, his mother proceeded to his *studio;* but her rising anger subsided when she looked upon the performances of her boy. He had avoided mere copyism, and had produced a picture composed from two of the engravings, telling a new story, and coloured with a skill and effect, which was to her surprising.

She kissed him (says Galt in his *Memoirs*), with transports of affection, and assured him that she would not only intercede with his father to pardon him for having absented himself from school, but would go herself to the master and beg that he might not be punished. Sixty-seven years afterwards the writer of these Memoirs had the gratification to see this piece in the same room with the outline painting of Christ Rejected, on which occasion the painter declared to him that there were inventive touches of art in his first and juvenile essay, which, with all his subsequent knowledge and experience, he had not been able to surpass.

It was the highest pleasure of Mr. West in after years to declare emphatically, that the kiss which his mother gave him decided him to be a painter.

West could never be called at any time of his life an educated man. The discipline and regular pursuits of school accorded not with the glowings of his fancy and his desire for painting. What he acquired in the way of education, was obtained after he was fifteen years of age, chiefly by the desultory assistance of his friends, and particularly of Dr. Smith, Provost of the College at Philadelphia, a gentleman of good classical attainments, who perceived his deficiency, and undertook his tuition. This judicious scholar directed his attention particularly to those objects and incidents which tended to fire his imagination, and to furnish future subjects for his pencil. His first attempt at historical painting, the "Death of Socrates," was produced about this time, and excited universal admiration.

The excitement accompanying these efforts of genius, contributed probably to bring on a dangerous fever; for West was of a sober and mild temperament except when roused by the love of his art. When, through the care and attention of his friends, his distemper began to subside, he was for some time so weak as to be obliged to keep his bed, and to have the room darkened. One day, while thus lying in bed, he saw a vision of a cow pass across the ceiling of his bedroom;—then followed a sow with a litter of pigs;—then, men, women, and children. His friends thought that his mind was disordered; but the medical attendant, when sent for, declared him free from fever or delirium. He however, prescribed for him a composing draught, and went away. When left to himself for a while, West rose from bed, and examining the shutters, discovered a knot-hole which threw into the darkened room a reflection of whatever forms were passing along the street at the time. On placing his hand over this hole, the figures immediately disappeared. The advantage of this discovery in furthering the delineations of natural objects, immediately struck his mind; and on recovering his health, he got a box made with one of the sides perforated, which he found of great practical use in promoting his improvement in painting. In short, without having ever heard of the instrument, he had invented the *camera obscura**.

When West had arrived at the age of sixteen, it was considered high time for him to make choice of a profession. His father, though delighted with the genius of his son, felt some scruple at making him a painter, the utility of which profession is not recognised by the Quakers. Some respectable neighbours pressed

* For an account of this optical instrument, see *Saturday Magazine*, Vol. XII. p. 72.

upon him the duty of giving the youth a sober trade, and not allowing him to exercise an occupation which ministered only to the concerns of vanity. The worthy man, troubled by conflicting opinions, determined to call a meeting of the Friends of Springfield, and to submit to the wisdom of the Society the future destination of Benjamin.

They met; but considerable difference of opinion prevailed, until a venerable member of the Society, John Williamson, at length arose and addressed the assembly as follows:—

To John West and Sarah Pearson a man-child hath been born, on whom God hath conferred some remarkable gifts of mind; and ye have all heard that, by something amounting to inspiration, the youth hath been induced to study the art of painting. It is true that our tenets refuse to own the utility of that art to mankind, but it seemeth to me that we have considered the matter too nicely. God hath bestowed on this youth a genius for art,—shall we question His wisdom? Can we believe that He giveth such rare gifts but for a wise and a good purpose? I see the Divine hand in this; we shall do well to sanction the art and encourage this youth.

The youth was summoned to appear before them. He came and took his station in the middle of the room, with his father on his right hand, his mother on his left, and the whole Quaker community around them.

Painting (continued John Williamson,) hath been hitherto employed to embellish life, to preserve voluptuous images, and to add to the sensual gratifications of man. For this we classed it among vain and merely ornamental things, and excluded it from amongst us. But this is not the principle, but the mis-employment of painting. In wise and in pure hands it riseth in the scale of moral excellence, and displayeth a loftiness of sentiment and a devout dignity worthy of the contemplation of Christians. I think genius is given by God for some high purpose. What the purpose is, let us not inquire—it will be manifest in His own good time and way. He hath in this remote wilderness endowed with the rich gifts of a superior spirit this youth, who hath now our consent to cultivate his talents for art:—may it be demonstrated in his life and works that the gifts of God have not been bestowed in vain, nor the motives of the beneficent inspiration, which induceth us to suspend the strict operation of our tenets, prove barren of religious or moral effect!

This reasoning was deemed satisfactory by the meeting; the women rose and kissed the young artist; and the men one by one laid their hands upon his head, and gave him their benediction.

This scene made a strong and lasting impression upon the mind of West: he looked upon himself as dedicated to art, and as having entered into a covenant to employ his pencil on subjects holy and pure. Hence he always shewed in his deportment the grave simplicity of the Quaker; and moral rectitude and propriety were diffused through all the productions of his pencil.

A CHURCHYARD THOUGHT.

To whom belongs this grassy mound,
With osiers intertwined,
So poor, compared with those around,
So narrow and confined?
For those around have ample room,
And proudly serve to tell
Where, laid within the silent tomb,
Wealth, birth, and grandeur dwell;
And fond inscriptions blazon forth,
(Alas how little read!)
And storied urns record the worth
And virtues of the dead;
But here there's neither stone or name
To mark the humble sod;
Enough! no marble need proclaim
Where sleeps the child of God.—E. T.

NATURAL HISTORY OF THE MONTHS.

V. MAY.

THEN came faire May, the fayrest mayd on ground,
Deck't all with dainties of her season's pryde,
And throwing flowres out of her lap around:
Upon two brethren's shoulders she did ride,
The twinnes of Leda; which on either side,
Supported her like to their soveraine queene;
Lo! how all creatures laught when her they spide,
And leapt and daunc't as they had ravisht beene,
And Cupid self about her fluttered all in greene.—SPENSER.

SUCH is the enthusiastic description of this month given by the poet Spenser in the time of Elizabeth, and such is the style of most of our older poets, who speak of this season as one of sunshine and of flowers, that ever led the footsteps of the joyous throng to dew-bespangled mead, or flowering copse, in search of the early blossoms of May.

Thus Herrick declares,

'tis sin,
Nay profanation, to keep in;
When as a thousand virgins on this day,
Spring sooner than the lark to fetch in May!

This was, in fact, the great rural festival of our forefathers. At the first peep of day on May morning, the youth of both sexes hastened to the fields, and gathered the blossoming branches, which, when still further adorned with wreaths of flowers, were to constitute the ornamental bowers at the entrance of their cottages. Their doors and lattices were all decorated with these garlands soon after sunrise, and the rest of the hours were passed in mirth and village pastimes. In the verses of Herrick, on the May-day of England, (from which we have already quoted,) there occurs the following description of the appearance of the houses and streets on the May morning of his time.

Come my Corinna, come; and comming marke
How each field turns a street, each street a parke,
Made green, and trimmed with trees; see how
Devotion gives each house a bough,
Or branch; each porch, each doore, ere this
An arke, a tabernacle is,
Made up of whitethorn neatly interwove;
As if here were those cooler shades of love.
Can such delights be in the street
And open fields, and we not see't?
Come, we'll abroad, and let's obay
The proclamation made for May;
And sin no more, as we have done, by staying;
Come, my Corinna, come, let's goe a Maying.

It is impossible to read these glowing descriptions of May, and not to feel that they are inapplicable to the early part of our month at the present time. To send our lads and lasses forth at early dawn, to gather the blossoms of the sloe, (for the hawthorn is only just in full leaf, and does not venture forth its flowers,) and to invite them to brave the cold and often frosty air, to collect the scanty products of our woods and fields *before sunrise* would be to offer them a sorry pastime indeed, and one of which they might rue the effects on their health for the remainder of the season.

To what cause, then, are we to attribute the change which appears to have taken place? Were our forefathers so hardy a race as to account a season similar to the commencement of our May a fit period for their rural pleasures, and are we to suppose that their description of the flowers and the sunshine is somewhat exaggerated in consequence of the difference of their feelings from ours; as well as of their propensity to copy the style of the southern poets? Or may we not rather believe that the seasons themselves are changed, since that time, so as to make the early descriptions of May thus unlike our own experience of the character of the month? The latter appears to

be the true solution of the question; and when we remember that, owing to the alteration of the style, the first of May is twelve days earlier than it used to be, this gives another reason why we must not look for a realization of the poet's description.

The name of this month is derived from the goddess *Maia*, a divinity who was worshipped under many names by the Romans, but whose chief title was *Bona Dea*, or the "Good Goddess," as representing the *Earth*. Maia is the name given to the brightest star in the beautiful constellation of the *Pleiades*. The month of May is said to have been called by the Anglo-Saxons *Trimilki*, "because in that moneth they began to milke their kine three times in the day."

Although the early part of the month has much of the fickleness of April, and is often found too chilling and frosty to allow of the rapid progress of vegetation, yet towards its close the country begins to glow with the beauties of Spring, and to display the richness of verdure, and the profusion of flowers, which make that season so delightful. The hawthorn clothes the hedges with its multiplicity of fragrant blossoms, and in the freshness of its green leaves, and the snowy white of its flowers, afford a contrast that is peculiarly pleasing to the eye. The orchards present

> One boundless blush, one white-empurpled shower
> Of mingled blossoms;

the sunny banks are gay with the bright blue flowers of the speedwell, and with numerous other little blossoms, which are scarcely noticed except by the practised eye of the botanist, but which all contribute to form the hues of that varied mantle with which the earth is covered. In some of our woods two very lovely and fragrant flowers may be met with,—the lily of the valley, and the sweet-scented woodroof or woodruff. The upright meadow crowfoot gives a golden hue to our pastures, which is diversified here and there by the pink blossoms of the meadow lychnis, or ragged-robin, and the more delicate ones of the lady's smock, or cuckoo flower. The curious looking *arum* *, or cuckoo-pint, is now in perfection, and is frequently plucked from its enveloping sheath for the amusement of children. Its broad leaves form an agreeable contrast with those of the hedge-geranium, the mouse-ear scorpion-grass, &c. The cowslip now attracts universal notice, and gives employment to the numerous groups of little folks who seek their pastime in the pleasant fields.

Towards the end of the month, except in seasons of peculiar severity, the trees have put on much of their clothing. Of these the aquatic kinds are the earliest,—as the poplar, willow, and alder: next, the lime, horse-chestnut, sycamore, and elm; and then the beech, oak, ash, and other trees. Of the latter, however, many present a wintry appearance, until the warm weather of June has fully set in, and then their young and lively green foliage, particularly that of the oak, looks still more beautiful, from being contrasted with the deeper hues of elms, and other trees which have been some time in leaf.

> No tree in all the grove but has its charms,
> Though each its hue peculiar; paler some,
> And of a wannish gray; the willow such,
> And poplar, that with silver lines his leaf,
> And ash, far stretching his umbrageous arm.
> Of deeper green, the elm; and deeper still,
> Lord of the woods, the long-surviving oak.
> Some glossy leaved and shining in the sun,
> The maple, and the beech, of oily nuts
> Prolific, and the lime, at dewy eve
> Diffusing odors: nor unnoted pass
> The sycamore, capricious in attire,
> Now green, now tawney, and ere autumn yet
> Have changed the woods, in scarlet honours bright.
>
> COWPER'S *Task*.

The hopes of the cultivator are frequently checked during this month, by the recurrence of what are called blighting winds. Owing to the immense quantities of aphides, and other insects which appear on trees and plants immediately after such weather, there is a popular notion that they are engendered by these easterly and north-easterly winds. This is decidedly erroneous: but that the air is made the means of furthering their emigrations from one place to another in vast numbers, has been proved by the experience of those eminent naturalists, White, of Selborne, and Kirby and Spence. The astonishing rapidity with which the aphis tribe multiplies its numbers likewise causes this species of blight to appear almost suddenly on the return of warm weather. Vast numbers of eggs are closely glued to the twigs of such trees as they infest, and the young insects when they come forth, begin a work of devastation, which often destroys the fruitfulness of the tree for that season. Many other insects now make their appearance: butterflies begin to sport through the air, and towards sunset several kinds of moths may be seen; near the streams, the dragon-fly spreads his gauze-like wings, and displays the azure of his body; perhaps an early swarm of bees issues from the hive, and proceeds in quest of a new home. These early swarms are more valuable than the rest, for the colonies of bees have time to lay up a good supply of honey against the winter; thus we find that in some parts of England the swarms are distinguished by different names, according to the order of their appearance, and that the second and third swarms are very little valued.

About the middle of the month the cattle are turned into the pastures, and though there may not be a very good supply of grass, the milk soon becomes richer and more abundant. Dr. Aikin makes the following remarks concerning the yellow crowfoot, with which the meadows are often covered.

> These flowers, also called buttercups, are erroneously supposed to communicate to the butter at this season its rich yellow tinge, as the cows will not touch it on account of its acrid biting quality. This is strikingly visible in pastures, where, though all the grass is cropped to the very roots, the numerous tufts of this weed spring up, flower, and shed their seeds in perfect security, and the most absolute freedom from molestation by the cattle. They are indeed cut down and made into hay, together with the rest of that rubbish that usually occupies a large proportion of every meadow, and in this state are eaten by the cattle; partly because they are incapable of separating them, and partly because, by drying, their acrimony is considerably subdued; but there can be no doubt of their place being much better supplied by any sort of real grass. * * * The excellence of a meadow consists in its producing as much herbage as possible, and that this herbage should be agreeable and nutritious to the animals which are fed with its crop. Every plant of crowfoot therefore ought, if practicable, to be extirpated. The same may be said of the hemlock, kex, and other umbelliferous plants which are common in most fields.

It is very interesting to watch the feathered tribes, in the preparation of their nests, and in the hatching and feeding their young, which is principally carried on during this month. The patience and assiduity displayed in this task are admirable, and the skilful arrangement of materials in some cases extremely curious. How cleverly does the house-martin fix the foundation of its nest, often against a perpendicular wall, without any supporting ledge under; and how remarkable is the sagacity which teaches these birds to choose for the most part an aspect where their nests will not be cracked and destroyed by the heat of the sun, previously to their completion, and which gives them the prudence and forbearance to work only

* See page 176

in the early hours of the morning, leaving each layer of the clay to dry gradually ere another is added. How beautifully rounded and how smooth is the interior of the song-thrush's nest, having a very thin layer of rotten wood spread out and cemented with the saliva of the bird, for its innermost coating, which is perfectly light, dry, and water-proof. What neatly interwoven fibres line the nest of the rook, forming, when separated from the rough exterior, a sort of basket that is by no means inelegant. And in the nests of our common small birds, when we remove the outer basketing of hay or roots, or the bed of moss or wool, how beautiful is the circular piece of hair-cloth which forms the lining. The hairs are collected and interwoven in many cases singly, and they are always bent carefully so as to lie smooth in the circular cup of the nest, and their ends likewise are pushed in among the moss, so as to leave the edge of the nest in a finished state. How remarkable for neatness of construction are the nests of the chaffinch and goldfinch. These birds are classed among the tribe called felt-making birds, because the moss, and lichen, and wool, of which they form their nests are felted together on the principle by which hats are manufactured. Different degrees of ingenuity are displayed by different birds, but in every case we find enough to admire and wonder at, in the skill and perseverance of these industrious workers. No less remarkable is the care they show for their young, and the devices by which they endeavour to draw away the attention of their enemies from their place of concealment.

> Nor toil alone they scorn: exalting love,
> By the great Father of the Spring inspired,
> Gives instant courage to the fearful race,
> And to the simple art. With stealthy wing,
> Should some rude foot their woody haunts molest,
> Amid a neighbouring bush they silent drop,
> And whirring thence, as if alarmed, deceive
> The unfeeling school-boy. Hence, around the head
> Of wandering swain, the white-winged plover wheels
> Her sounding flight, and then directly on,
> In long excursion, skims the level lawn,
> To tempt him from her nest. The wild-duck hence,
> O'er the rough moss; and o'er the trackless waste
> The heath-hen flutters; pious fraud! to lead
> The hot-pursuing spaniel far astray.—THOMSON.

WHEN a statue had been erected by his fellow-citizens of Thasos to Theogenes, a celebrated victor in one of the public games of Greece, we are told that it excited so strongly the envious hatred of one of his rivals, that he went to it every night, and endeavoured to throw it down by repeated blows, till at last, unfortunately successful, he was able to move it from its pedestal, and was crushed to death beneath it on its fall. This, if we consider the self-consuming misery of envy, is truly what happens to every envious man. He may perhaps throw down his rival's glory; but he is crushed in his whole soul beneath the glory which he overturns.—DR. BROWN.

NOTWITHSTANDING the consequences which may justly be dreaded by sinful and incorrigible beings, it is certainly of all things most desirable that there should be a God. Social order, and civil government, with all the sublime contemplations of religion, its dignifying effect, and powerful consolations, clearly depend on the grand principle, that there is a Being who made and who governs the universe. Such a Being must be infinitely worthy of the adoration of his rational creatures; he must have a claim on their implicit obedience; and to him they must all be accountable. Here lie the foundations of human happiness, and particularly of that moral excellence, which even in this life approximates the rational creature to its highest attainable perfection; here too are the securities, and the only effective securities, of every constitution calculated to promote the present or the future felicities of man.—DUNCAN.

ON QUARANTINE AND LAZARETTOS.

I. QUARANTINE.

THE term *Quarantine* has reference to a human calamity of so dreadful a nature, that it calls for a sentiment of gratitude towards a bountiful Providence, that our country is so seldom visited with it: the calamity to which we allude is the *Plague*.

There has been a general opinion prevailing among mankind, that the plague is infectious and contagious, or in other words, that it is communicated from one person to another both by the *touch* and by the *breath*. As the eastern nations have always been liable to the plague, the legislators of Western Europe have been anxious to devise means to prevent the introduction of that dire affliction into countries hitherto free from it. Ships have often arrived from Greece, Turkey, Smyrna, &c., at the ports of Western Europe, and have brought with them the plague, which they have communicated to almost every part of Europe, at different times. In 1720 a Levantine vessel entered the port of Marseilles, and communicated the plague into it, from whence it spread over the south of France.

How far the plague is really communicated by the touch and the breath, is a difficult question to decide. About twenty years ago the House of Commons appointed a committee to inquire into this very subject; and the evidence which they received was of a most contradictory character; some of our eminent physicians contending that the plague is *not* contagious, and others that it is. On the one hand the following statements have been made, and extensively credited:—Shaking an old feather-bed thrown aside seven years before, was said to have raised a plague, which carried off nearly six thousand persons:—by twenty-five soldiers one after another putting on an old leathern coat, ten thousand persons perished from plague:—some cords, used in burying the dead twenty years before, caused the death, by plague, of ten thousand persons:—the plague overspread Paris, in consequence of a workman removing from the walls of a house, where they had remained several years, some clothes covered with plague-spots: a young man was seized with the plague by thrusting his hand into an old trunk, where a spider's web instantly caused a plague-sore:—these are some of the many stories which have been circulated and credited, chiefly among uneducated persons. On the other hand it is stated, that the Turks make no scruple of wearing the clothes of their relatives deceased of the plague: and that the bedding and clothes of those who die in the pest-house are the perquisites of the Pachas and governor's, and are annually sold at the public bazaars, without any fear of contagion. It is also an undoubted fact, that at the time of the plague of London in 1665, the streets were universally narrow, the inhabitants crowded together in a small space, the supply of water was deficient, and the means of preserving cleanliness, both in streets and houses, were very defective; while since the fire of London, in 1666, when improvements have been made in all these respects, the plague has not once made its appearance.

We must therefore leave to future observers the settlement of the important point, whether or not, and to what degree, the plague is contagious. It is sufficient for our present purpose to know that the British government, as well as many others,—we believe most others,—regard it as contagious; and we proceed to state the means adopted for preventing its introduction into this country.

The term *quarantine* denotes a period of forty days, during which, ships coming from countries infected (or supposed to be infected) with the plague, or other contagious disorder, are prohibited from entering port,

and are excluded from society, in order to prevent the communication of disease. The term of forty days has no peculiar merit in preference to a longer or a shorter period; but it is supposed to be one of the many instances of the adoption of a similar period taken from Scripture: the deluge continued forty days and nights; and that period became in a manner sacred, for there are several allusions to such a period of time in the Bible: (Gen. vi. 3; vii. 4; Deut. ix. 9; 1 Kings xix. 8; Jonah iii. 3; Matth. iv. 2.)

Our brief details on the subject of quarantine will be principally derived from Chitty's *Treatise on the Laws of Commerce*. Although the term *quarantine* is still retained, the period may be either longer or shorter at the option of government. There is a quarantine-officer at each port; and the principal document from which these officers are enabled to ascertain whether a vessel ought to perform quarantine, or what is to be the duration of it, is called a *bill of health*. This instrument is a certificate from the consul at the foreign port from whence the ship sailed, notifying the general state of the public health at that port, and in the country to which it belongs. If the bill purports, that at the time of the ship's sailing, no infectious disorder existed there, it is called a *clean bill of health*. If the bill states that there are *rumours* of an infectious disorder, but that it had not actually appeared, it is then a *suspected or touched bill*. Lastly, a *foul bill*, or the absence of *clean bills*, imports that the place was infected when the vessel sailed. In the two latter cases, a period of quarantine is ordered, proportionate to the supposed danger of infection.

The quarantine regulations of this country have been subject to many changes, according to the state of opinion, as to the contagious nature of the plague, and similar diseases. But the regulations at present in force, are principally those which were determined by the Act 6 Geo. IV. c. 78. Some of these regulations we will briefly detail.

There are signal-flags and lanterns provided, to denote the state of health among the crew of a ship. If a ship, liable to quarantine, from the port from whence it sailed, arrive within two leagues of the British dominions, or come within two leagues of another ship at sea, she is to hoist a large yellow flag at the mast-head, if she have a *clean* bill of health; but a yellow flag with a black spot in the middle, if she have *not* a clean bill; and in the night-time, in both cases, a large signal-light shall be hoisted on the mainmast. If the plague be actually on board the vessel, she is to hoist a peculiar black and yellow flag in the day-time, and *two* lanterns at night.

Every ship, on arriving near our shores, and taking in a pilot, must deliver to him a written paper, containing the name of the place at which the ship loaded, and of all the places at which she touched on the homeward voyage. Upon being questioned by the quarantine officer at any port, the captain must give true answers (upon oath if required) to every question put to him by that officer, respecting the health of the ship. If any infectious disease appears on board, he is to make it known to the Privy Council, and neither goods nor passengers are to come on shore, till directions have been sent to that effect. The captain is also to give to the pilot a list of all the articles composing the cargo, since some are deemed to be liable to retain contagious taint more than others. If the quarantine officer considers a vessel to be liable to that probation, it is imperative on the captain to conduct the ship, and all that it contains, to any quarantine station that may be pointed out to him: if any resistance to the orders given be offered, his ship may be fired upon, or compelled by any force to obey the orders; and no seaman or passenger is permitted to leave the ship, either for the shore or for any other ship. The same applies to goods, letters, and everything that may be contained on board.—These are some of the regulations imposed upon commanders of vessels; and a breach of any one of them is punished by very heavy penalties.

Pilots are ordered to demand the written or verbal account (just referred to) of the state of health in the ships to which they go;—to give notice to the captain of any proclamations in council that may have been recently made respecting quarantine, whether relating to places or to particular kinds of goods;—to remain on board in the same manner as the captain, crew, and passengers, and not to leave the ship until any quarantine regulations that may then be in force shall have been duly attended to;—and, in case of the existence of quarantine orders at the time, to steer the vessels into any port that may be commanded. Heavy penalties follow the non-observance of any of these regulations.

Every one of the regulations here detailed, are more or less incumbent on every person, crew, or passenger, officer or seaman, who may be in a suspected ship. The person, the clothes, the cargo, the luggage, and letters, are all equally under the embargo laid at such times. Even to endeavour to convey a letter on shore, would subject the party to a fine of 500*l*.

As quarantine does not actually mean a detention, in all cases, of forty days, but is used for all periods of detention, we may state, that quarantine, to some extent or other, is performed by all vessels whatever, which have ever sailed from, or touched at, any port in the Mediterranean, or in Barbary. Likewise, those arriving from any place, at which, for the time being, the privy council may suppose the plague to have existence: in these cases the ship is considered to be under quarantine from the time of leaving the suspected port. All vessels are liable to quarantine which have had any communication with a ship coming from the ports in question, by receiving on board either persons, cargo, baggage, wearing-apparel, or letters. Also, vessels arriving from other parts of Europe, and containing as cargo, certain articles considered most liable to infection, unless certificates can be produced that such articles were not grown or produced near the Mediterranean states. The articles most liable to suspicion, are all those whose materials have ever possessed either animal or vegetable life, such as leather, hides, hair, fur, feathers, linen, cotton, silk, hemp, &c.

It will thus be seen how very rigorous are the laws relating to quarantine. In all the above cases, if the quarantine officers are not satisfied that the ship and its cargo are perfectly free from contagion, the ship is conducted to one of several ports that have been laid down by the privy council, and there to remain rigidly secluded and cut off from communication, as long as the council may please to order, whatever may be the injury that the cargo may suffer from delay.

It thus appears how necessary it is to know what is the real state of the question respecting the infectious nature of the plague. If, as has generally been supposed, the plague be contagious by touch and breath, scarcely any quarantine laws can be too severe; but if, as begins to be extensively surmised, the plague is only contagious when there is a want of common cleanliness, a relaxation of these laws is an object of much importance. Mr. Chitty has enumerated the disadvantages under which captains and merchants are placed by the quarantine laws. The time occupied in the performance of quarantine, and

the heavy expense to which it gives rise, occasion the ship-owner to charge a higher sum for the hire of a vessel to convey a cargo, than he would otherwise do: this is invariably done, for he cannot tell beforehand that the ship will not be liable to quarantine. Moreover, it is asserted, that mercantile intrigue and manœuvre sometimes occasion a foul bill of health to be given to a ship when there is no necessity for it. The freight of a vessel is higher, the merchant waits longer for a return of his capital, the charge for pilotage is increased, and the provision for a ship's crew are expensive, during quarantine. Many kinds of cargo are perishable, and become utterly useless if detained forty or fifty days, as is sometimes the case. The cargo of each ship is generally soon known among the merchants; and if several ships, with a certain class of articles as cargo, be detained for quarantine, the market for those articles becomes thrown into a forced state, from the known arrivals of the cargoes, but the impossibility of getting at them for some weeks. Lastly, if a vessel under quarantine be attacked by a storm and placed in peril, the natural humanity which distinguishes seamen towards each other receives a check: one vessel fears to assist another, lest it should become liable to quarantine, and consequently to loss, by communication with a suspected ship. To make humanity a losing game is a thing always to be regretted.

In a second paper we shall speak of *Lazarettos*, a subject to which we have not yet alluded.

NATURAL MONITORS.

I ASKED the Lark in the Summer morn,
Why he left so lightly his nest in the corn;
Why he sang so sweetly his matin song,
Which the clouds and the breezes bore along,
When he knew, that, perhaps, before 'twas night
The hunter's shaft might stay his flight?
By the messenger Wind was this answer given,
"I fear not, I fear not, I fly towards heaven!"

I asked the Flowers in the soft Spring time,
Wherefore they smiled in their youthful prime,
When the stormy days so soon should come,
That would blight for ever their beauty and bloom?
And the sweet Flowers answered, "Each day renews
On our leaves the sunshine that dries the dews:
Why should we not smile? Till now we have thriven;
And the sunshine and dew are both from heaven!"

I asked the Clouds, in their pomp of light,
As they sat in the crimson west at night,
Wherefore they gathered around the sun,
And brightened, although his race was run;
When, perhaps, the breezes of night might strew
Their fragile folds into mist and dew?
The Clouds replied, "Though we should be driven
Away from our rest, we should still be in heaven!"

And I saw a lovely Child, who knelt
Beside the cot where his father dwelt,
At the sun-set hour; and his hands were raised
Towards the sky on which he gazed;
And on his rosy lips a prayer
Seemed hovering, like the Summer air:
"Fear'st thou," said I, "the shades of even?"
He smiled and said, "See how bright is heaven!"

Miss M. A. BROWNE.

ATHEISM is not the persuasion of the man, no, nor the belief of the Devil, but the punishment of the Beast. 'Tis that hardness of heart,—that reprobate sense to which God delivers up an obstinate sinner,—'tis the last of judgments inflicted by God on him that has refused all methods of his mercy. God has forsaken him, and delivered him up to the worst of all evils, that is, to himself.—OLD DIVINE.

THE vermin of equivocation are often hidden under the mass of words.—FULLER.

ADVERTISEMENTS AND COUNSELS OF SIR THOMAS SMITH.

ALTHOUGH all men promise to help you if you had need, yet nevertheless trust not too much thereto. Many of them which now do offer to take armour for your sake, if occasion be offered, will be the first to strike you, to give you the overthrow.

Do good while you have power thereunto, and never do hurt though you may: for the tears of the offended and the complaints of the grieved, may one day have place in the sight of God to move Him to chastise you.

Bestow your benefits and offices rather upon the good, than upon your friends; for among your friends it is lawful to depart your goods, but not your conscience.

If you will not err in your counsels, nor stumble in your actions, embrace them that tell you truth, and hate them that flatter you; for much more ought you to love them that advise you, than those that will seem to pity you, when you are in danger.

Have always in memory the benefits you have received from others, and enforce yourself to forgive such injuries as others have done unto you.

Esteem much that little of your own, and regard not the abundance of others.

Make much of your dearest friends; and do not procure any enemies.

Deny not justice to the poor because he is poor; neither pardon the rich because he is rich.

Do not good only for love, neither chastise only for hatred.

In evident cases abide not the counsel of others; and in doubtful cases determine not of yourself.

Suffer not sin unpunished; nor well-doing without reward.

Deny not justice to him that asketh, nor mercy to him that deserveth it.

Chastise not when thou art angry, neither promise anything in thy mirth.

THE COMMON ARUM, OR CUCKOO-PINT.

THE Cuckoo, which is welcomed amongst us at this season of the year, as the sure harbinger of genial weather, has given their common names to several flowers which make their appearance about the time of his annual visit. Among these is that curious-looking flower, the common arum, whose wonderful structure has given rise to disputes and differences of opinion among eminent botanists, while at the same time it has afforded unmixed delight to numbers of the unlearned; we mean the little rosy vagrants who search the hedges at this gladsome season for *lords and ladies*, or *wake-robin*, or *cuckoo-pint*, as this plant is indifferently called.

This plant is generally known, and is sufficiently abundant on shady banks, at the bottoms of hedges, near the margin of rivulets, &c. Its flowers are very thickly set upon a club-shaped part, called a *spadix*, which is itself enclosed in a leaf of a very peculiar form, the edges of which are curved inwards till they meet, and form a hollow sheath or *spathe*. The spathe may be observed on many of our garden plants, but the spadix is not so common, being confined, as we believe, to the palms and the arum tribe. After a while the spadix and its aggregated flowers, with the spathe which had enveloped them, die away, and disclose a small long bunch of berries, green at first, and afterwards of a yellowish red colour, containing in each berry several seeds. These berries are sometimes as large as the kernel of a hazel nut, and last all the summer, looking very brilliant among the briers and wild plants of our hedges.

The botanical name of the cuckoo-pint is *Arum maculatum*: it is the only British species of a family of plants belonging to the natural order *Aroideæ*. This family is botanically divided into three sections, according to the form of the leaves, which are either composite, simple, or arrow-shaped. The roots of many species are thick and tuberous, and made use

of in tropical countries as a common article of food, though they are said to disagree with Europeans. The roots of *Arum maculatum* are edible when properly prepared, but it is only in times of extreme scarcity that they have been made use of for that purpose. One of the species, *Arum macrorhizon*, is cultivated in China to a great extent, and answers the same purpose as the potato in this country. But although the roots of the arum tribe, after roasting or boiling, are many of them found useful as food, all these plants are acrid in a high degree, and some few are dangerous poisons. The sharp, biting taste of the root of the common arum was proved by a person who, having heard of its many uses in former times, dug up one from curiosity and tasted it. "The piece I bit off was scarcely the size of half a split pea, yet it gave out so much acrid milk, that for more than half an hour my lips and tongue were inflamed, and continued to burn, as if cauterized by hot iron; nor did the sensation wholly cease till after breakfast the next morning."

The uses of the British arum are detailed to us by the old herbalists at some length. As a medicine they would have us believe it to be, in one form or another, a remedy for poison and the plague, for boils, for coughs and shortness of breath, for subduing inflammation of the eyes, and restoring them "when by some chance they become black and blue," for pains in the ears, for the gout, &c. As a cosmetic it is said to be of sovereign efficacy in removing blemishes of the skin. As it is not likely that our readers will feel disposed to make trial of its virtues in these respects we omit the directions given concerning the different modes of preparing the plant. We learn from Gerard and others that the roots of the cuckoo-pint were employed in making starch, and that the article thus obtained was very "pure and white." But it is added "it is most hurtful to the hands of the laundresse that hath the handling of it, for it choppeth, blistereth, and maketh the hands rough, and rugged, and withall smarting." From this ancient domestic use of the arum, it obtained the name of starch-wort. We may conclude our account of the uses of this plant in the words of the quaint-speaking Culpepper. "Authors have left large commendations of this herb, you see, but for my part, I have neither spoken with Dr. Reason nor Dr. Experience about it."

Humble as is the appearance of this plant, it is welcomed among the other harbingers of spring, and though closely wrapped in its spotted veil has not escaped the notice and admiration of the lover of nature and of flowers. Hervey thus speaks of it in his *Theron and Aspasio*:—

"*Arum*—a wild herb, which unfolds but one leaf, formed after a very singular pattern, bearing some resemblance to a hare's ear. It is really one of the prettiest fancies in nature's wardrobe, and is so much admired by country people that they have dignified it with the apellation of "lords and ladies;" because it looks, I suppose, somewhat like a person of quality, sitting with an air of ease and dignity in his open sedan. In autumn, after both flowers have vanished, a spike of scarlet berries, on a simple stalk, is all that remains.

This comparison of the flower with a person seated in a sedan, recals another familiar name of the arum, i. e. *Jack in a box*, derived from a ridiculous resemblance found for it to an image standing in a case. The author just quoted is not content to consider the arum as a mere curiosity; he introduces it to our notice in conjunction with some of the most beautiful products of spring:—

"The hawthorn in every hedge is partly turged with silken gems, partly diffused into a milk-white bloom. Not a straggling furze, nor a solitary thicket on the heath, but wears a rural nosegay. Even amidst that neglected alley, the arum rises in humble state; most curiously arrayed with luxuriant families, each distinguished by a peculiar livery of green.

The poet Clare has placed the appearance of the arum among the tokens of the arrival of spring, in the following pleasing lines:—

Sweet are the omens of approaching spring,
When gay the elder-sprouts her winged leaves;
When tootling robins carol-welcomes sing,
And sparrows chelp glad tidings from the eaves.
What lovely prospects wait each wakening hour
When each new day some novelty displays,
How sweet the sunbeam melts the crocus flower,
Whose borrowed pride shines dizened in his rays;
Sweet new-laid hedges flush their tender green;
Sweet peep the *arum* leaves their shelter screen;
Ah! sweet is all that I'm denied to share;
Want's painful hindrance holds me to her stall,—
But still Hope's smiles unpoint the thorns of care,
Since Heaven's eternal spring is free from all.

A KEEN and exquisite perception of whatever is ludicrous or defective is rarely united with a lofty or poetical sensibility for elegance and beauty.

SIR WILLIAM TEMPLE observes, that he esteemed Sir Philip Sidney, both as the greatest poet, and the noblest genius of any that have left writings behind them, and published in our own or any other modern language; a person born capable, he says, not only of forming the greatest ideas, but of leaving the noblest examples, if the length of his life had been equal to the excellence of his wit and virtues.

How beautiful and how varied are the forms of praise and thanksgiving in the Book of Psalms! They appear as the outpourings of a grateful heart before God for the glories of his creation,—for succour in the hour of danger,—for deliverance from affliction,—for national privileges,—and for anticipated salvation. There is an earnestness in many of them, that lays hold upon our strongest sympathies: for (without speaking of their inspired and prophetic character) they may be truly said to spring from feelings which are natural to every man who is not utterly debased, and in the exercise of which, generous tempers ever take delight.—SEDGWICK.

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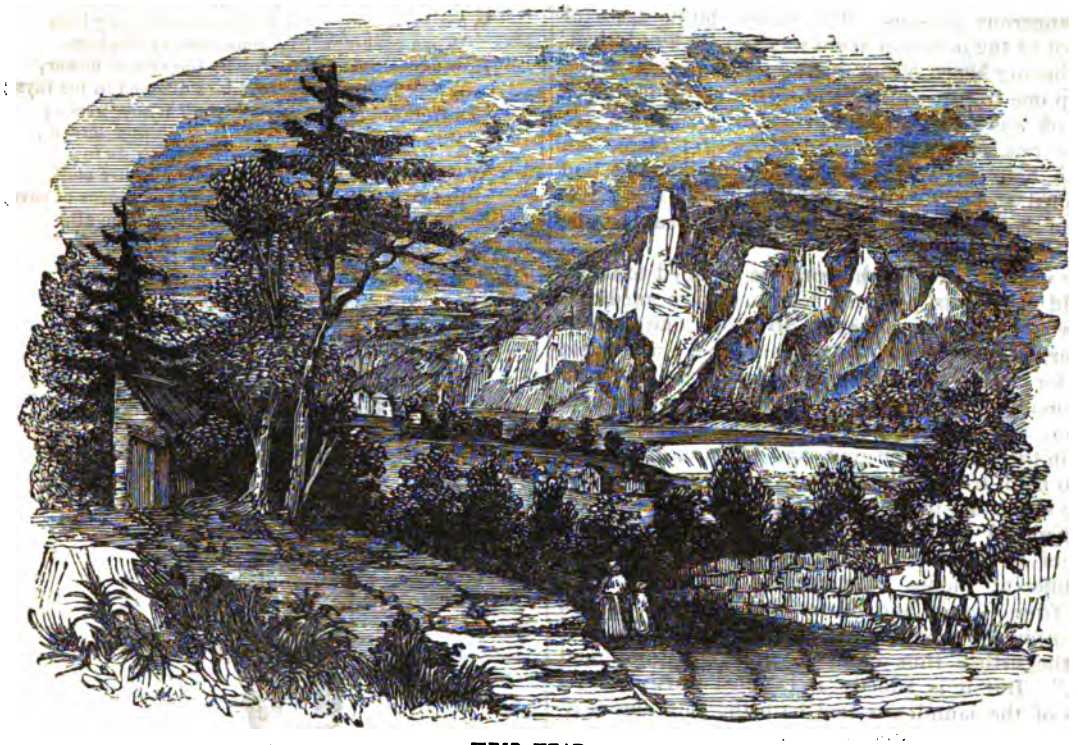

WEIR HEAD.

THE BANKS OF THE TAMAR.

II.

Beautiful
Art thou, *Pentillie*, rising o'er the flood,
That round thy foot, involved as the folds
Of the sleek serpent, leads a mazy course,
As though it were a pity soon to steal
The voyager from scenes so passing fair!
All eyes are fixed upon the woods,—the woods!
And on that princely structure which they hold
Within their green embrace! How bold the bank
Of Tamar rises, with its verdurous sheet,—
Tree above tree upcrushing! Gentlest airs
Are playing with the seas of foliage now,
And here and there clear green spots meet the glance,
Like islands scattered carelessly between
The billowy leafage; and the sun
Is shining over all, the skies are blue,
And Tamar bright and placid.——Carrington.

In our last paper on this subject, (p. 153,) we traced the river Tamar to Cotehele. The next place worthy of notice is Pentillie Castle, a noble structure on the Cornish bank of the river. The present castle, the seat of John Tillie Coryton, Esq., is situated on a bold knoll, which rises almost perpendicularly from the navigable water of the Tamar. It is a superb structure, selected from the designs of the late William Wilkins, Esq., architect of the National Gallery, and of University College, London. The building is in the Gothic style, and is chiefly composed of Portland stone. The lobby is said to contain one of the finest painted windows in England.

Near the mansion, on the northern side, is a conical mount, covered with evergreens. The top is ornamented with a stone temple, and beneath it is a vault in which Sir James Tillie ordered himself to be interred. A strange story has been told by Gilpin respecting this interment. It is said that Sir James Tillie was an atheist, a man of wit, and well stored with all the ribaldry and common-place jests against religion and Scripture which are so well suited to display pertness and folly. In order to carry his scepticism a step further than his companions, he is said to have left orders to his executors, that, when he should be dead, they were to place his dead body, in his usual garb, and his elbow chair, upon the top of a hill, and to arrange on a table before him, bottles, glasses, pipes, and tobacco. In this situation he was to be immured in a tower, of such dimensions as he describes, where he proposed, he said, patiently to await the coming of the resurrection. This is the substance of the story; and we allude to it only to show how cautious persons should be in charging the memory of a deceased man with such serious and awful iniquity. Mr. Gilbert, in his *History of Cornwall*, invalidates almost every part of this story. Sir James was certainly buried there, but the story of the table, bottles, &c., is utterly untrue; while the will, preserved in Doctors' Commons, proves, that so far from his principles being atheistical, they breathe throughout a disposition fraught with the utmost submission to the will of Divine Providence, and a perfect confidence in the wisdom and mercies of the Creator.

The Tamar then winds its course towards the south, and passes near Bere Alston, a small town in the parish of Bere Ferris. This town, although little more than a hamlet, had the privilege of returning two members to parliament, until the time of the Reform Act. The estate of Bere was bestowed by

William the Conqueror, on a branch of the house of Alençon, in France, from which was derived the name Alston. Henry Ferrers held this manor in Henry the Second's time, and had a castle here. Martin Ferrers, in the time of Edward the Third, had the defence of the southern coast against an invasion of the French. From this family the manor successively passed into those of Lord Brook, Lord Mountjoy, Earl of Newport, Sir John Maynard, Earl of Stamford, and the Duke of Northumberland. There are several lead mines near Bere Alston, but they are not now rich in ore, although at one time not only lead, but silver likewise, was procured there.

Not far from hence is the village of Tamerton, a pretty sequestered spot, but not remarkable for anything except an aged oak, under which a tragical deed is reported to have been committed in the time of Queen Elizabeth, and which has formed the material for a metrical tale by the Rev. Mr. Johns, of Crediton.

We next come to Warleigh House, the seat of Walter Radcliffe, Esq., on the banks of the Tamar, about six miles northward of Plymouth. The estate belonged to Samson Foliott, in the time of King Stephen; and afterwards passed into the families of the Gorges, the Bouvilles, the Coplestons, and the Bamfyldes, from whom it descended to the Radcliffes. The house is large, and appears, both from internal evidence and from records still preserved, to have been built prior to the reign of Queen Elizabeth. The south front has nearly the form of the letter E; and the entrance hall from its lofty and imposing aspect, appears like one of the ancient baronial halls. As the house is situated nearly at the point where the river Tavy flows into the Tamar, there are beautiful views presented from its grounds. An eminence within the grounds commands a view of the Hamoaze, with the British ships lying there,—the churches of St. Budeaux and Landulph,—the junction of the Tavy and the Tamar,—with a long undulating line of the varied banks of the latter, bounded by the heights of Hengeston-down, in Cornwall; while on the other hand are seen the winding course of the Tavy, the distant landscape affording a view of Buckland Abbey, and being terminated by the Dartmoor hills.

The Tamar next reaches St. Budeaux, called also Budeoksbed, and familiarly Budshed. The village is situated on an eminence commanding many fine prospects. The family of the Budeoksheds possessed the estate for some centuries. From this family it passed to the Gorges; and from them successively to the Trevills, the Trelawneys, and the Clerks. The manor house is a very old and dilapidated building, and is at present, we believe, inhabited only by a farmer. The church of St. Budeaux is a plain and simple edifice, built from the materials of an older structure. During the latter part of the last century the rectorship was filled, for more than sixty years, by the Rev. T. Alcock, who was remarkable for many peculiarities in his character. The homeliness of his dwelling was extreme; for every article of modern convenience was excluded. His drawing-room was a miserable bed-chamber, with walls that had been once whitewashed. Here he boiled his coffee, toasted his cakes, and entertained his guest at the same time; who forgot, in the charms of his conversation, the wretched apartment they were in, and the time-worn bed on which they were seated, for want of chairs and sofas. It does not appear that this style of living arose from scantiness of income, but from penuriousness of disposition:—he was, however, both a learned and an amiable man.

Approaching still nearer to Plymouth, the Tamar arrives at Weston Mill. This little hamlet is deeply seated in a vale at the head of the creek of the river. The creek presents an extremely gratifying scene when the tide is up, and is gently rippling round the little promontories: it then exhibits all the charms of a sequestered lake.

We now approach the point where the Tamar suddenly expands to that large sheet of water which, under the name of the Hamoaze, is so well known as a fine harbour for our men of war. At this spot is situated Mount Tamar, the seat of the late Captain Sir Thomas Byard, well known for the distinguished part he sustained in Lord Duncan's memorable victory at Camperdown. The house is situated on the brow of an acclivity, and commands a fine view of the adjacent country,—the prospect being seen to the best advantage from some broken ground which rises rather to the eastward of the house.

On the Cornwall bank now appears the town of Saltash;

> *Saltash* appears,
> Beheld with interest; for, though the hand
> Of boastful, spruce, and calculating Art
> Has here no level and right-angled streets,
> And traces here no long unbroken lines
> Of buildings uniform, there is a charm
> In thy irregular rush adown the hill,
> *Saltash!* And the continued dotting of thy slope
> With gardens, which the hand of Leisure forms,—
> Abode of flowers and fruitage, where repose,
> Fit recompense for years of honoured toil,
> Waits on the sons of Ocean.

It is thus that the Devonshire poet speaks of the pleasant town of Saltash. Saltash is built on a solid rock, with houses of the same material. The houses rise one above another in steep ascent, and at the top of the hill is the chapel, the town-hall, and other buildings. Saltash was originally made a borough at a very early period, and was in the possession of Reginald de Valletort in the reigns of Kings John and Henry the Third. From this family it passed to Richard, Earl of Cornwall, Henry the Third's brother; and these estates being afterwards vested in the crown, were by Edward the Third made part of the Duchy of Cornwall, which, we believe, they still remain.

The Tamar is very wide both above and below Saltash, but here narrows to a ferry. A skilful pilot is said to be needed to traverse with safety this part of the river. Immense tracks of mud stretch out from each side, which, when slightly covered with water, are so extremely delusive, that they can scarcely be distinguished from the deeper portions of the channel. Parties have frequently been detained all night on these shoals; for if a boat once runs aground there, she is almost always obliged to wait till the next flood tide, before she can get off.

At the junction of the river Lynher with the Tamar is situated Antony, the fine mansion of R. P. Carew, Esq. This is a square massive edifice, built in 1721. The interior is commodious and elegant, and contains several fine portraits, by Holbein, Vandyck, Kneller, Reynolds, and other distinguished artists. In front of the house is a court-yard, enclosed on two sides by rows of offices, supported by piazzas, and on the third by a brick wall.

Still farther down is Thanckes, the seat of Lady Graves, widow of the late Admiral Lord Graves. The house, which is unassuming in its exterior, is pleasantly situated at the head of a small bay, near some fine groves of ancient trees. Admiral Graves was engaged in the action of the 1st of June, 1794; and for his services on that occasion he was created a peer of

Ireland, by the title of Lord Graves, Baron Graves, of Gravesend, in the county of Londonderry. He was also rewarded with a gold chain and medal, and a pension of 1,000*l.* per annum. The following year he was raised to the rank of Admiral of the White. He died in 1801, after having spent fifty years in the naval service.

We have now approached nearly to Mount Edgecumbe, on the western side of the mouth of the Tamar. Mount Edgecumbe has been celebrated by writers of different classes, and of different countries, for the beauty of its situation. It is a beautifully luxuriant hill, with a mansion near the summit, belonging to the Earl of Mount Edgecumbe, which was built by Sir Richard Edgecumbe, about the year 1550, and is constructed in the Gothic style, of an oblong shape, with octagonal towers at the four corners. A modern wing, containing a library and other rooms, has been since added to the building; but as this part is hidden by a row of stately trees, it does not injure the architectural effect of the mansion. The interior possesses some spacious apartments, among which is the noble hall. At the bottom of the lawn on which the house is situated, and close to the water's edge, are the flower gardens, cultivated in the English, French, and Italian styles. This garden is celebrated for its beauty in every respect.

The position of Mount Edgecumbe with reference to the surrounding scenery, is well described by the celebrated French writer, Dupin, who visited England some years ago.

Mount Edgecumbe stands on an extensive base; it rises and projects like a promontory, forming the western boundary of Plymouth roads. Its sides are majestically shaded by some beautiful old plantations, and its summit commands one of the finest prospects England presents. On the east, the spectator beholds, as if beneath his feet, the road and the vessels lying at anchor. The long narrow line formed by the town of Stonehouse is distinctly marked; in front rise the Citadel and insulated barracks of the Royal Marines, and in the rear the magnificent Naval and Ordnance Hospitals. Farther to the left, the Hamoaze sends off numerous and deep ramifications from both its banks, as the trunk of a vigorous tree shoots forth its branches in all directions. Along an extent of upwards of four miles, its principal course is filled by first-rates, frigates, and smaller ships of war; some entirely dismantled, others rigged, fully equipped, and ready to join any sudden expedition, at a moment's warning. Finally, to crown this magnificent picture, the plains, hills, and high mountains of Devon and Cornwall, form on the east, north, and west, an immense amphitheatre of fields, meadows, heaths, forests, and rocks. The two extremities of this amphitheatre, extend gradually to the ocean, the immense surface of which presents no resting point to the eye, except Eddystone lighthouse."

The whole range of important buildings and towns on the eastern bank of the mouth of the Tamar, such as Devonport, Plymouth, Stonehouse, Stoke Damerel, &c., together with the Breakwater, the Citadel, Mount Wise, Drake's Island, &c., are too important to be included in the present article, which has relation more to the natural scenery along its banks, than to the naval arrangements at its mouth. Here, therefore, for the present, we must quit the Tamar and its interesting associations.

Ordeal is a word derived from the Anglo-Saxon, which also comes from the Teutonic, and signifies judgment. The methods of trial by fire, water, or combat, were in use till the time of Henry the Third, and the right of exercising them was annexed to several lordships or manors. At this day, when a culprit is arraigned at the bar, and asked how he will be tried, he is directed to answer "By God and my Country," by the verdict or solemn opinion of a Jury. "By God" only, would formerly have meant the ordeal, which referred the case immediately to the Divine Judgment.

ON QUARANTINE AND LAZARETTOS.

II. Lazarettos.

In our last paper we detailed the precautions which have been taken by our Legislature to prevent the introduction of the plague into the British dominions. We have now to turn our attention to countries bordering on the Mediterranean, where *Lazarettos* have been erected for this purpose.

Lazarettos, or *Pest-houses*, are establishments constructed to facilitate the performance of quarantine, and particularly the purification of goods. They have usually a port, in which ships from a suspected place may anchor; and when perfect, are provided with lodgings for the crews and passengers, where the sick may be separated from the healthy; and with warehouses where the goods may be deposited; all intercourse between the lazaretto and the surrounding country being, of course, interdicted. The lazarettos at Leghorn, Genoa, and Marseilles, are considered to be better than all others in their arrangement. The facilities they afford to navigation are very great; for, as ships from suspected places may discharge their cargo in the lazaretto, they are not detained longer than they would be were there no quarantine regulations. The goods deposited in the lazaretto, being inspected by the proper officers, and purified, are then admitted into the market.

It must be evident that such an establishment is strikingly different from anything existing in England; and many of our most eminent commercial writers think that England has much to learn from foreign countries on these subjects; among others, Mr. M'Culloch remarks:—"We do not know that many more important services could be rendered to the commerce of the country, than by constructing a proper quarantine establishment on the Thames."

It may be interesting to inquire what are the internal arrangements of the lazarettos of foreign countries; and fortunately we can have these queries answered by the labours of one, to whose name is attached one of the most enviable characteristics that a human being could possess: we allude to John Howard, the philanthropist. This truly amiable man, who, fully responding to the precept, "Oh, let the sorrowful sighing of the prisoners come before thee," visited almost all the prisons in Europe, also directed his attention to *lazarettos*. He visited France, Italy, Greece, Turkey, and Asia Minor, drew plans and elevations of all the lazarettos, conversed with the physicians of all the countries he visited, respecting the nature of the plague and the arrangements of the buildings to be used as lazarettos; and gave to the public the result of his self-imposed and almost self-destroying labours, in *An Account of the principal Lazarettos in Europe*. From this work we shall draw a few details, observing that the main features are probably nearly the same now as when Howard wrote, although alterations have doubtless been made in minor points.

At *Marseilles*, a port of the south of France, is a Health Office, *Le Bureau de Santé*, situated close to the port. In an outer room of this office, the depositions of captains of ships are taken, who come in their boats to an iron grating: this book is open to public view. If letters, or orders for supplies, be brought by the captains who are performing quarantine, a servant, situated at an iron lattice two feet distant, takes the letter with a pair of iron tongs, and dips it into a bucket of vinegar, previous to handing it in to the directors of the office.

The *lazaretto* is on an elevated rock near the city, quite close to the sea, and commanding the entrance to the harbour. It is of large extent; and among

THE LAZARETTO AT MARSEILLES.

numerous other apartments, contains twenty-four large rooms for passengers, of which some are above stairs, and open into a spacious gallery. In these rooms are closets for beds, which the passengers and guards are obliged to bring with them. The guards are sent by the Health Office, and their number is regulated by the number of passengers of each ship which performs quarantine. The expenses of these guards are paid by the passengers: they act both as guards and as servants. The quarantine of passengers who come with a foul bill of health is thirty-one days. During a portion of the time they are permitted to visit the *parloirs*. These are long galleries provided with seats, in which the persons in quarantine may see and converse with such friends as may choose to visit them. The parties are separated by a space of ten feet, by means of balustrades and a wire guard. This wire guard is to prevent anything from being handed from one person to another; and that nothing may be thrown over, and no escapes made, there is a double wall round the lazaretto. There is a bell, the ringing of which calls any of the persons down to these *parloirs*.

Within the lazaretto are also the governor's house, a chapel in which divine service is regularly performed, and a tavern, from which persons under quarantine may have their meals sent to them, and which has also the exclusive privilege of supplying them with wine.

Ships arriving at Marseilles moor at the island of Pomeque, where a governor resides; from thence goods are conveyed to the lazaretto in large boats kept for that purpose. Cottons, with a *foul bill* of health, must remain on deck six days, and for the next six days, the first bales must remain on the bridge in the lazaretto, before any others can be received by the porters, (porters and guards are sent from the Health Office as soon as a ship arrives). After these twelve days the cargo of the ship is brought in. If the ship have a clean bill of health, the landing of the goods is effected much more quickly. When the cargo, (say bales of cotton,) is placed in the lazaretto, the articles are exposed to the open air, the most costly being placed in warehouses with open balustrades.

We now proceed to *Genoa*. The lazaretto at this port is a detached building, situated near the city, on the sea shore. At the entrance there is a guard-room for ten soldiers, and a spacious bakehouse. Within are many vaulted rooms for passengers, which open into a corridor, where there are doors to separate the passengers of different ships; this corridor, which is about eleven feet wide, is separated from the internal area of the building by high wooden palisades. All the rooms have brick floors and vaulted roofs, and windows which have iron bars and shutters, but no glass.

On the second floor are ranges of warehouses, about sixteen feet wide; to these warehouses there are spacious brick ascents on the outside, on which bales of cotton are opened and aired. There are in the front three towers, or elevated rooms; the middle one adjoins the governor's apartments, and from its windows he has a full view of all the internal area and corridors. The lazaretto has a double wall, like that at Marseilles, and between the walls is a burying ground.

The Genoese have also a lazaretto at the Gulf of *Spezia*.

The arrangements at *Venice* are very extensive, and will afford us an opportunity of mentioning most of the matters connected with this subject.

A Board of Health was instituted at Venice nearly four hundred years ago, and has always possessed considerable power. It is governed by three commissioners and four assistants, who sit in rotation to superintend the health of the city. The board appoints overseers in different parts of the city, to

inspect the provision sold in the markets and shops, and to send in reports of the general health of the place. The board also appoints the priors, or governors of the lazarettos, of which there are two. These two lazarettos are situated one at about two miles, and the other at five from the city, both on little islands, separated from all communication, not only by broad canals surrounding them but also by high walls; each of them is about twelve hundred feet in circumference. They have a ground-floor and one above it, and are divided and subdivided into a great number of apartments for the reception of passengers. All these apartments have their separate entries and stairs, and every range of them has an open court in front, with plots of short grass, but with no kind of flowers or trees. Various sheds are ranged round, under which goods can be preserved from rain, and yet exposed to a current of fresh air.

When a ship arrives at the port, the board of health sends *guardians* on board it. These take a list of the crew, and also of all the goods contained on board, which lists they send to the office. They allow nothing to go in or out of the ship until orders have been received from the board. There are some ports from which a ship must invariably perform quarantine, from others the necessity for it is only occasional. A messenger conducts the captain on shore, without letting any one approach him, and a clerk at the Health Office asks the necessary questions, and, standing at a distance, receives the ship's papers, which are fumigated before he reads them. If the result is satisfactory, the captain returns to his ship, and may begin to unload immediately.

If there are passengers on board, they are, after these preliminaries, conducted to the lazaretto, where they are consigned, together with their clothes and personal effects, to the hands of guardians, who assign them apartments during the time that the board of health deem it expedient to detain them.

If it be considered necessary that the cargo should perform quarantine, the ship is unloaded, and the goods taken to the lazaretto. They are transported in lighters having no sails; the ropes are well tarred; and the lighters are rowed to the shore by the seamen of the ship. The Governor receives the goods, and consigns them to keepers and porters, who deposit them in proper places. *Wool* is taken out of the bags in which it is packed, ranged in heaps about four feet high, and moved, turned, and mixed every day during their retention in the lazaretto; and every fifth day, the heaps are entirely removed to a different spot. *Silk*, *flax*, and *feathers*, are treated in a similar manner. The bags of *cotton-wool* are all unripped at one end, and the porters every day thrust their naked arms into the midst of the cotton: the bag is then sewn up, turned over, and the other end ripped and treated in a similar manner. *Woollen* and *linen cloths*, and similar woven fabrics, are repeatedly unfolded and re-folded, and occasionally hung on cords in the open air. *Furs* are kept constantly exposed to the air, and are often moved and shaken. *Bees-wax*, and *sponges*, are purified by putting them into salt-water for forty-eight hours; they are then free. *Animals* with long hair are confined for a considerable time: those with short hair are considered sufficiently purified if they are made to swim on shore; while *birds* have to be repeatedly sprinkled with vinegar.—These are the principal articles which are considered liable to retain traces of an infectious disorder; and the time for which they are detained varies according to circumstances.

The Prior or Governor of the lazaretto has a most responsible situation. Among his duties are the following:—He must see that all the gates and doors are locked every evening at sunset, both the outer gates, and those of the passengers, porters, and merchandize: he keeps the keys until sunrise. He suffers no fishing boats, nor other small craft, to come within a certain distance of the lazaretto, nor any communication between them and ships that may be in quarantine. He must neither buy nor sell, nor make bargains or contracts with passengers or others within the lazaretto, nor permit others to do so. He visits every apartment under quarantine twice a day, to see that the passengers are properly served and supplied with necessaries, and that everything goes on according to the rules laid down. When letters are written from the lazaretto, they are fumigated by the guardian who superintends that department, and then handed in a split stick to the Prior, who then sends them off. He causes the porters who are employed in the expurgation of goods, to sweep and keep clean their respective sheds, and not to allow bits of wool, &c., to be flying about. The Prior must not *touch* either person, or thing, while under quarantine: if he unfortunately does so, he must himself perform quarantine. The Prior must not leave the lazaretto, except when called by the magistrate, or upon business with them relative to his office; and not without express permission, on his own private affairs.

We wish the reader to observe, that although we have described these regulations as if they at present existed, we are not sure how far they are acted on at Venice at the present day, but have stated them such as they were in Mr. Howard's time. But, as it is our object to describe the general nature of lazarettos, we have dwelt at some length on the one which has long existed at Venice, on account of the completeness of the arrangements. It is probable that the revolutions which Venice has undergone, have occasioned some changes in these as well as in other of her institutions.

Oh, hapless Infancy! if aught could move
The hardest heart to pity and to love,
'Twere surely found in thee; rude passions mark
Stern manhood's brow, where age impresses dark
The stealing line of sorrow; but thine eye
Wears not distrust, or grief, or perfidy;
Thy tear is soon forgotten; thou wilt weep,
And then the murmuring winds will hush thy sleep
As 'twere with some sad music; and thy smile,
Unlike the world's, that mask deceitful wiles,
Best suit thy helpless innocence and, lend
A charm might win the world to be thy friend!

BOWLES.

The highest intellect will be shipwrecked, if it rashly navigates the ocean of controversy, and pays no regard to the landmarks which God has provided. The lowest may be safe, if it keeps to them with reverence.—*Portrait of an English Churchman.*

To me there never has been a higher source of earthly honour or distinction than that connected with advances in science. I have not possessed enough of the eagle in my character to make a direct flight to the loftiest altitudes in the social world; and I certainly never endeavoured to reach those heights by using the creeping powers of the reptile, who, in ascending, generally chooses the dirtiest path, because it is the easiest.—SIR HUMPHREY DAVY.

Although Credulity is nearly allied to Superstition, yet it differs very widely from it. Credulity is an unbounded belief in what is possible, although destitute of proof and perhaps of probability; but Superstition is a belief in what is wholly repugnant to the laws of the physical and moral world. Thus, if we believe that an inert plant possesses any remedial power, we are credulous; but if we were to fancy that, by carrying it about with us, we should become invulnerable, we should in that case be superstitious.—DR. PARIS.

SKETCHES OF NATIONAL HISTORY.

HOLLAND.

THE history of the seven provinces which, from the name of the two largest, are generally known by that of Holland, is perhaps the most extraordinary of all with which the annals of modern times makes us acquainted. The country itself is an acquisition from the tempestuous waters of the North Sea, and but for the intelligence and persevering industry of the people, might at this day have been as barren and desolate a tract as that of the Landes of Gascony, on the Bay of Biscay, the cultivation and peopling of which is only now occupying the public attention in France, while Holland has been covered for ages with thriving cities, towns, and villages, and clothed with the richest cultivation as respects both use and ornament. But the barriers which the Hollanders had to erect to defend their meadows and corn fields against the wild waste of land floods and ocean tides, threatening from time to time to swallow them up along with the country that sustained them, were but feeble emblems of the national virtues which they had long to oppose to the enemies of their religion and their liberties. So few in number were the Batavian Protestants who, under William of Orange, commonly called the "taciturn," raised the flag of independence against the spiritual encroachments of Rome and the civil tyranny of Spain, that Queen Elizabeth had thoughts at one time of offering to establish the whole of them in the maritime towns of England. And yet these Batavians maintained a struggle of eighty years' duration against that powerful enemy, and at the close of that period not only obtained the acknowledgment of their independence; but by the vigour of their government, the extent of their trade, and the wealth they had acquired by their industry, entered into the first rank among European states.

When we find that in the year 1810, this same new-born nation, which a hundred years before had also acted a conspicuous part in opposing the ambition of the king of France, had disappeared from the map of Europe and had its territory divided into so many departments, or counties of the French empire, we may well ask by what steps there could have taken place so rapid a downfall, and what lessons the Divine Providence would have the nations learn from a humiliation so astounding and so complete.

The latest and the wisest historians of Holland are very explicit on this point. As they trace back the early glories of their country to the elevating and energy-giving influence of religious principles, diffused among the people, associated with all their institutions, and mingling with all their public and private actions, so they trace the progress of their national decline from the engrossing effects of successful industry, the corrupting influence of maxims and fashions introduced from other countries, and particularly from France, during that long neutrality which Holland enjoyed towards the middle of the eighteenth century, while her neighbours were at war, and by the gradual substitution of non-religious for religious and Protestant principles in her national and municipal institutions and laws.

But let the Hollanders speak for themselves. The following passage from an anonymous author, said to be the able editor of the *Archives of the House of Orange*, appeared in a periodical work, dated 7th May, 18 1.

In contemplating our history, we cannot but perceive that the greatness of the United Netherlands owed its brightest lustre to the Reformed Church of Christ. This is an historical truth, a truth none ever questioned until history was forced into the service of infidelity. The Dutch commonwealth sprang from the battles waged in defence of the faith.

Piety towards God was the ruling principle of the country; by it the national character was formed, and with it, as a leading trait, whatever was striking and peculiar in that character was associated. Our country's prosperity at home, and the respect it enjoyed abroad, must be ascribed to the energy with which the people were inspired in battling for the true religion; and what was done for the purpose of removing differences from the Church, and the wars with Spain and France, had the establishment of pure Protestantism for their object. What made the family of Orange Nassau peculiarly beloved was the fidelity it showed in guarding the Church from the poison of heresy, from encroachments on its liberties, and from foreign attacks. Religion lay at the foundation of the state, as once indeed was the case everywhere, but in Holland, more than anywhere else, it was transfused throughout every part of society, and under the banner of the Protestant faith, freedom, toleration, prosperity, and national power and greatness, were amply diffused and augmented.

But for nations, as well as men, unbroken prosperity is fraught with temptations against which ours was not always proof. The fifty years that followed the peace of Utrecht, in 1713, was a period of tranquillity at home and peace abroad. Trade produced immense profits; wealth brought luxury in its train, and luxury led to corruption of manners. Selfishness and a decay of all interest in things of general importance and of an elevating tendency, became the leading character of the times. The moral condition of the nation and of the Church may be gathered from the literature of that period; it was remarkable for the insignificance of its productions, and this, it may well be believed, affected the vitality of the Christian faith. With a decline of heart-felt interest in all that concerned religion, there was a proportionate decline in the powers of national resistance to foreign influences, in moral counteractions to the inordinate pursuit of wealth, and in preservatives against infidelity.

No Briton at the present day can well peruse the above passage without asking himself what have been the moral effects on his own country of the tranquillity at home and peace abroad, which have marked the period of twenty years that has elapsed since 1815, being just half that of fifty, during which there were introduced into Holland all those evil elements which prepared that country for a rapid and a fearful fall. How many of the harbingers of that fall are already discernible amongst us;—inordinate pursuit of gain, luxury followed by licentious manners, selfishness, heedlessness about the concerns of religion and the Church, the decay of noble and elevating feelings, a literature abounding in shallow and insignificant productions, a decline in our powers of resistance to foreign influences, in moral counteractions to avarice, and in the antagonist influences to infidelity.

The Dutch writer of our own days is fully borne out in his remarks by the testimony of the few who, living at the time when these changes were in progress, had the sagacity to perceive and the fidelity to denounce their fatal tendency. In Van de Wynpersse's *Demonstration of the True and Eternal Divinity of Our Lord Jesus Christ*, published in the latter part of the last century, the author gives the following striking picture of the moral state of Holland, immediately preceding those political changes which ended in its being blotted out of the map of Europe.

The diligent and daily reading of God's word, both in the family and in the closet, so much in esteem among Protestants immediately after the Reformation, is exceedingly rare. A torrent of new publications, less fitted to instruct than to amuse, to gratify an idle curiosity, and to encourage a frivolous waste of precious time, has banished the Bible. Children, after a short and defective education, such as they themselves are apt to despise, are allowed publicly to profess the religion to which they have been accustomed by joining in the holy communion; but in so superficial a manner that the least banter in libertine company suffices to unhinge every good principle and to efface every good impression. Such

professing Christians, as also people of rank, though in other matters learned and intelligent, continue in the same beaten path, attend church, and adhere to the doctrines taught there; but, never examining the foundations of their faith, they remain unsettled, and fall before the first assaults of infidelity. Though the principles of the English deists, men whose philosophical talents were displayed in a dry and unpopular style, made not so much progress on the continent, many libertine Frenchmen attacked the Holy Scriptures and the doctrines of Christianity, not by grave argumentation, but by artful insinuations, witty allusions, ludicrous representations, banter, and ridicule; and these modes of attack greatly influenced those persons especially who had been fashionably educated. Their profane sneers and ill-applied wit infused the poison of scepticism into the unguarded, and to undo the mischief required deeper investigation than they were either able or willing to undertake.

Such being the moral condition of the country, can we wonder that the Hollanders became discontented and seditious; ascribed their grievances, which were for the most part imaginary, to the very principles and institutions which had carried their fathers to such a pitch of greatness, but which their degenerate sons regarded as a wearisome yoke; and ran, headlong into those plausible theories about liberty and equality, which, though contradicted at once by Holy Scripture and by common sense, easily caught the fancies of men too vain and arrogant to submit to be taught by either? Losing the favour of the Almighty, who for nearly two centuries had distinguished them by many extraordinary national deliverances, and given them to enjoy a course of tranquillity at home and successful commerce abroad, altogether unprecedented for a country of such narrow extent and recent origin, they fell under the guidance of a party which led them from downfall to downfall. In the war of American independence, after much mean shuffling and underhand assistance to our enemies, they drew on themselves a declaration of war from our government, and after suffering little less than we did in the course of the war, and that was not little, they became the only party at the peace of 1783, which came off, not benefited, but deeply and permanently injured.

Cursed with mutual jealousies and internal divisions, they ceased to command the respect of their neighbours, and after being at the point of attaching themselves in separate provinces to other countries, Zealand to England, North and South Holland to France, and Guelderland to Prussia, a Prussian army marched in upon them and quelled their divisions. Their subsequent history down to 1810, when Napoleon visited Amsterdam, was nothing but a succession of losses and disgraces. The element, water, which had on several occasions saved their independence by being made to flood the country, was by the Divine Providence turned to their destruction: a fleet which might have proved their salvation, having been fixed by an unprecedently severe frost, in the ice, and in that position attacked and made prize of by a body of French cavalry. Instead of ruling extensive colonies, they ceased to govern themselves. The jealousy of the tyrant, who in his lust of empire, had included all Holland in the territories of France, would not allow them to occupy even subordinate offices in the administration of the country. The soldiers which ought to have assisted the arms of their ancient ally in opposing French aggression, were swept off by thousands to swell the emperor's armies, and add to the victims of his wars. Their trade, once so flourishing, dwindled down to petty smuggling with England, in the course of which many Dutch seamen joined our fleets, and fought gallantly under our Jervises and Nelsons; but both the smuggling and the desertion reaching the knowledge of Napoleon, became pretexts for new and oppressive severities. Yet it was during these calamities that many of the Hollanders seemed to awaken from the dreams of a false philosophy, returned to the principles of their fathers, and to their fathers' God. Then, too, the attention of the public-spirited and influential was turned from the imaginary to the real evils of society. The education of the people, the improvement of prisons, the care of the poor, and various other objects of philanthropy, gave a new direction to the public mind, and prepared the country for a right enjoyment of its now recovered independence. H.

PAST—PRESENT—FUTURE.

The time when I played with the king-cup flowers;
Those golden gifts of summer hours;
The time when I danced o'er the purple heath,
And scarcely felt the earth beneath;
And smilingly looked to the sky above,
That spread o'er me in cloudless love;
When my step was as light as the roving wind,
That kissed the flowers in my tresses twined;
When my eyes, undimmed by a dark tear, shone:—
That blessed time is gone,—is gone.

The time when I loved to sit at noon,
And hearken to the woodbird's tune:
When the flowers and leaves upon each tree
Were more than flowers and leaves to me;
When my spirit in fancy floated along,
And around my heart was a dream of song;
The time when I lay by the river's side,
That had words for me in its murmuring tide;
When my life, like the waves of that stream, went on,
Bright, pure, and sparkling,—is gone,—is gone.

And the hours of darkness and days of gloom,
That shadow and shut out joy, are come:
And there's a mist on the laughing sea,
And the flowers and leaves are nought to me,
And on my brow are furrows left,
And my lip of rose and smile is reft,
And the time of gray hairs and trembling limbs,
And the time when sorrow the bright eye dims,
And the time when death seems nought to fear;
So sad a life—is here,—is here.

But the time when the quiet grave shall be
A haven, a resting-place, for me,
When the strong ties of earth are wrenched,
And the burning fever of life is quenched,
When the spirit shall leave its mortal mould,
And face to face its God behold,
When around it joy and gladness shall flow,
Purer than ever it felt below,
When heaven shall be for ever its home,—
Oh! this holiest time is still to come!

Miss M. A. Browne.

The strength of all sciences, which consisteth in their harmony, each supporting the other, is as the strength of the old man's fagot in the band; for were it not better for a man in a fair room to set up one great light, or branching candlestick of lights, than to go about with a small watch-candle into every corner?—Lord Bacon.

They are happy who have not taken up their rest in a world fluctuating as the sea, and passing away with the rapidity of a river.—Cowper's Letters.

The world has its objects of admiration, and God has objects of his love. Those make a noise and perish; and these weep silently for a short season and live for ever.—Cowper's Letters.

Nations must be punished in this world, for they have no future.

Literature is a mere step to knowledge; and the error often lies in our identifying one with the other. Literature may, perhaps, make us vain: true knowledge must render us humble.—Mrs. Sandford.

THE GOAT-MOTH CATERPILLAR,

(Cossus ligniperda.)

The Goat-Moth is common in various parts of the south of England, and is one of the largest species of British night-moths, measuring, across the expanded wings, from three inches to three inches and a half. It is of a gray colour, with numerous dark spots and lines on the upper wings. The under pair of wings are of a dull brown colour. The larva, or caterpillar state of this moth, is that in which it is most commonly seen: it is nearly three inches long at its full size, and is of a dingy yellow colour, partially blended with red, and marked with black spots.

This caterpillar has the power, in common with all the caterpillars of butterflies, moths, &c., of spinning silk for its protection and convenience. Thus, if blown from its favourite situation on the willow-tree, by a sudden gust of wind, the caterpillar breaks its fall by instantaneously producing its rope of silk, by which it not only descends to the earth without injury, but has the means of regaining its situation at pleasure.

The means by which the insect is enabled to ascend this thread of its own spinning are supplied by the peculiar structure of its legs, the fore-legs being furnished with a curved claw, and the hind-legs constructed on the principle of forming a vacuum, so as to take a very firm hold, as in the case of the foot of the common fly. The larvæ of many insects assume their perfect state after passing one year in the caterpillar form, but three years are required by the goat-moth from the time it leaves the egg till it arrives at the winged state, and during this long period it commits much devastation within the tree which it has taken for its abode. When a great number of these insects take possession of an ash or a willow, they frequently bore holes in it in all directions, by means of their strong mandibles or jaws, so as to weaken the tree, and increase its liability to decay. The young and imperfected insects mine their way through the solid timber, and obtain their nutriment from it; while those which are approaching maturity no longer proceed with the work, but out of the materials already obtained, form a case in which to envelope themselves, and so await their final change. Through the greater part of its life, however, this insect is carrying on its destructive work, and secretly sapping the foundations of some of our beautiful vegetable structures, from whence comes its name of *ligniperda*, or wood-destroyer. The term *cossus* signifies merely a worm found in wood, and it has been imagined that the insect we are describing is the same which was prized, in its larva state, by the Roman epicures, and used by them as an article of food. If such were really the case, we cannot but feel some surprise at their choice, seeing that the caterpillar of the goat-moth, on account of its size and colour, as well as the peculiarly disagreeable odour which it emits, is one of the last of the insect race that would invite our fancy in that way. This odour is so powerful as to be perceptible in the air of the neighbourhood where the caterpillars abound, and to remain on the hand touched by them, notwithstanding repeated washings. From some resemblance in this scent to that of the goat, the insect has been called the *goat*-moth, though it is during its *caterpillar* state that the peculiarity exists.

The celebrated Lyonnet has made this caterpillar the subject of very minute dissections, and has published a quarto volume on its history alone, which volume is illustrated by numerous beautiful plates, drawn and engraved by himself. The structure of silk-spinning caterpillars is wholly different from that of warm-blooded animals. The spinning apparatus is near the mouth, for the insect has no lungs, and breathes, not by the mouth, but by air-holes in the sides, eighteen in number. The silk bags are long floating vessels, containing a sort of liquid gum, which hardens on being exposed to the air. These are in most cases longer than the body of the insect, and consequently lie in a convoluted state, like the intestines of four-footed animals.

The *Cossus ligniperda*, living as it does in the wood of trees, requires very little silk, and the bag is found much shorter in this insect than in many others. The silkworm is not above half the size of the goat-moth caterpillar, yet its silk-bag is four times as long. The spinneret was discovered by Lyonnet on minute dissection to consist of two tubes, united into one before their termination. It is shaped at the end somewhat like a writing pen, but with less slope, and is admirably fitted for being applied to objects to which it may be required to attach silk. Having fixed the first drop of gum in the desired situation, the insect fearlessly lets itself fall, and thus draws out a long thread of the fluid, which dries, and acquires consistence and strength immediately. The whole of Lyonnet's laborious researches, carried on for several years, led, as he himself assures us, to the destruction of only one caterpillar.

Any one who will take the trouble to watch the motions of insects will not fail to observe their surprising strength of muscle. The astonishing leaps taken by some, and the power of suspending themselves, without any apparent adequate support, possessed by others, must often come before our notice. To account for this power, it is only necessary to examine the muscles of a caterpillar, by means of a microscope: they will be found to consist of innumerable threads, crossing each other in all directions, and resembling in their texture the finest lace-work.

The impatience of confinement manifested by these creatures is shown in an instance recorded by Rösel, in which the caterpillar constructed a ladder of silken ropes, in order to ascend the smooth surface of the interior of a drinking-glass, in which it had been placed. It is also difficult to retain the insect in a box of any description, for it quickly perforates it, or finds the means of escaping at the lid.

A pollard-willow is perhaps the most usual habitation of these caterpillars, though they are also to be found in the oak, ash, poplar, &c

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Brasidas, being bit by a mouse he had caught, let it slip out of his fingers: "No creature," said he, "is so contemptible, but what may provide for its own safety, if it have courage."—Plutarch.

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BENJAMIN WEST AND HIS WORKS.

No. 14.

BENJAMIN WEST AND HIS WORKS.
II.

For a few years succeeding the decision respecting West's profession, which we recorded in the former paper, he employed himself at Philadelphia and New York, in the practice of portrait-painting, and in copying everything good that came under his eye. He produced at this time an original work on the subject of the "Trial of Susannah."

Having raised by his labours, and the kind assistance of his friends and patrons, a small sum of money, Mr. West determined to embrace an opportunity which offered of visiting Italy, in order to extend his views, promote his taste, and obtain a knowledge of all that had been effected by the great masters.

At Rome, the arrival of an American quaker to study the fine arts, caused an astonishing sensation. He was introduced to Cardinal Albani, and through him to the most distinguished persons then in Rome. West, like Reynolds, was at first imperfectly sensible of the beauties of Raphael and Michael Angelo, of the latter of whom he never became a decided admirer. While at Rome, West painted the portrait of Lord Grantham, which was shown to a large company of artists and amateurs, as the production of Mengs, then the most celebrated portrait-painter in Rome. It was at length decided that the colouring surpassed the usual performances of Mengs, but that the drawing was not so good. Mengs himself was so generous as not to feel at all mortified at what had passed, but contracted a friendship for West, and gave him the best advice, as to the course which he should pursue in his travels, and the department of the art to which he should finally devote himself; and this department was the *historical*.

While preparing to visit, in accordance with the advice of Mengs, the schools of art in the principal Italian cities, he was one day strongly impressed by an interview which he had, in the British Coffee-house, with a famous *improvisatore*, to whom the people of Rome gave the flattering name of Homer.

I behold in this youth, (sang the bard, as he accompanied himself with his guitar,) an instrument chosen by Heaven to create in his native country a taste for those arts which have elevated the nature of man,—an assurance that his land will be the refuge of science and knowledge, when, in the old age of Europe, they shall have forsaken her shores. All things of heavenly origin move westward; and Truth and Art have their periods of light and darkness. Rejoice, O Rome! for thy spirit, immortal and undecayed, now spreads towards a new world, where, like the soul of man in Paradise, it will be perfected more and more.

Such was the substance of this song, and West, who delighted to refer the prophecy to himself, rewarded the singer with money and with tears.

Soon after this we find that the agitations of Rome, so different from the quiet of a Pennsylvanian life, threw him into a dangerous fever, from which the physicians declared he could only recover by being removed to a more tranquil scene. He returned to Leghorn, where, after a lingering sickness of eleven months, he was completely cured. After his recovery he visited all the great schools of Italy, and made a copy of the famous "St. Jerome" of Correggio, which he presented to the Academy of Parma, of which he was elected a member. This piece had such great excellence, that the reigning prince desired to see the artist, who appeared at court *with his hat on*, which was excused by the prince, who was not ignorant of the character of the quakers, nor of the condescension of the British law in their favour.

Having after this passed through Savoy into France, he resided some time at Paris. He at length arrived in England, in the middle of 1763; and, after due consideration, determined to settle here; having first sent for Elizabeth Shervell, his wife elect, from Pennsylvania, to whom he was married in 1765, at the church of St. Martin-in-the-Fields.

He soon became acquainted with Reynolds and Wilson, the latter of whom was the best landscape-painter of the day. But his chief obligations were to Dr. Drummond, archbishop of York, who engaged him to paint the story of "Agrippina landing with the ashes of Germanicus." The archbishop was so pleased with the performance, that he immediately introduced both the picture and the artist to the notice of George the Third. That monarch, who had both taste and discernment in the fine arts, was so pleased with it, that he thenceforth made Mr. West the object of his especial favour and patronage. He suggested to him the subject of "The final Departure of Regulus from Rome;" and the applause which the picture received at the first exhibition, was equally gratifying to the artist and his royal patron. West had already painted for Dr. Newton, "The Parting of Hector and Andromache;" and for the bishop of Worcester, "The Return of the Prodigal Son." His love of serious and solemn subjects had thus attracted the special notice of some of the dignitaries of the church.

Mr. West was now frequently invited to spend the evening at Buckingham-house, and his majesty held long conversations with him on the best means of promoting the arts. It was to these that the plan of the Royal Academy owed its origin; an institution calculated, under proper management, to be beneficial to art. On the death of Sir Joshua Reynolds, in 1792, Mr. West, with universal approbation, succeeded to the office of president. After the "Regulus," he painted for the king "The Oath of Hannibal." "The Death of Epaminondas," and several other subjects. For Earl Grosvenor he painted "The Death of Wolfe," so well known from the fine print of Woollet. The most remarkable point about the execution of this last picture is, that the usual affectation of the antique is thrown aside, and the picture represents the actual and natural appearance of the scene of battle at the moment of the death of Wolfe*.

During the progress of the works on which West was employed by the king, he also painted the portraits of their majesties and the royal family. Sir Joshua Reynolds, who was then president of the Royal Academy, engrossed the profession of portrait-painting with the public at large; while West seemed patented to trace the lineaments of royalty. He made in the whole nine pictures, some with single, others with grouped figures; for which he was paid the sum of two thousand guineas. But the opinion of the best judges on the merits of these productions, as compared with those of Sir Joshua, in the same line, is that though they are well conceived and prettily drawn, they want the life-giving principle, and therefore seem to be but shadows of the living substance. There is no deception;—there is a flatness about them, and the eye seems to see through both the colour and the canvass.

It appears that West's capacity for labour was great, as the large quantity of work which he has left behind him abundantly testifies. As he distributed his hours of study with exactness, one day was like another in his life. On the pictures especially desired by the king, he expended much thought and labour; and to render them worthy of the place which was destined to receive them, he "trimmed," as he told his majesty, "his midnight lamp." Hence, his chief

* For an engraving of this picture, and a narrative of the subject of it, see *Saturday Magazine*, Vol. XIV., p. 209.

works impart to the beholder the sensation of labour rather than of the acme of talent. His imagination was mainly in accordance with subjects of a soft and kind nature, such as those which form the frontispieces to these papers. Where the nature of the service in which he was employed by the king led him to cope with the old masters, as in the "Last Supper," the "Crucifixion, and the "Annunciation," he had of course no hope of excelling, when the "odiousness of comparison" was resorted to.

After performing many historical works, West received from his sovereign a commission to adorn St. George's Hall, in Windsor Castle, with a series of paintings, referring to the national history of the reign of Edward the Third; and when this was completed, he suggested, and was directed to execute, a course of thirty-five paintings, illustrative of the history of revealed religion. These paintings were intended to adorn a private chapel or oratory at Windsor. He divided his work into four dispensations,—the Antediluvian, the Patriarchal,the Mosaical, and the Prophetical. There were in all thirty-six subjects, eighteen of which belonged to the Old Testament, and the rest to the New. They were all sketched, and twenty-eight were executed, for which West received 21,705*l.* The whole sum which West obtained from the king, for these and his other works, amounted to 34,187*l.*

Soon after his elevation to the presidency of the Royal Academy, the Duke of Gloucester called on West from the king, to inquire if the honour of knighthood would be acceptable to him. West intimated to his Royal Highness, with every profession of humility and respect for the king, that, if his Majesty had offered a baronetcy, with a permanent income to support the title, it might have been desirable for him to receive his Majesty's favour. But no further notice was taken of this affair; he continued, nevertheless, to frequent the palace as usual, and as usual, his reception was warm and friendly.

During the peace of Amiens, he visited Paris, for the purpose of seeing the collection of statues and pictures in the Louvre; on which occasion he obtained a distinguished reception, not only from the French artists, but from the French government. The honours paid to Mr. West in France were not favourably viewed in England; and Mr. Wyatt, at the next election, was seated in the president's chair, though, in due time, West was restored with the approbation of all. Another affair of still greater importance occurred in 1801, when the court was at Weymouth; for the queen sent him directions by Mr. Wyatt, to suspend all the pictures then painting for his Majesty's chapel at Windsor, until further orders. This took place during a temporary illness of the king, who, upon his recovery, was graciously pleased to tell West,—"Go on with your work, West; go on with the pictures, and I will take care of you." This was his last personal intercourse with his sovereign: he continued the progress of the pictures till the regency, when he was dismissed.

He now resorted to the public, and exhibited his principal pictures with great profit and fame. The British Institution rewarded him with three thousand guineas for his picture of "Christ healing the sick;" and a copy of it, which he presented to the hospital at Philadelphia, enabled the committee of the hospital, by the exhibition of the picture, to enlarge the building, and receive more patients.

West was now advancing in years. Mrs. West, with whom he had lived happily for more than half a century, died in December, 1817. He himself followed her in March, 1820. His body was removed to one of the saloons of the Royal Academy, and interred with great pomp in St. Paul's cathedral. The ceremony was rendered august, not only by the presence of the academicians and students, but also by the attendance of some of the most distinguished individuals in the kingdom.

GARDEN HERBS. III.

Thyme.

O'er fringed heaths, and mountain steeps,
With silent steps the artful Thyma creeps,
Unfolds with fragrant bloom her purple flow'rs,
And leads with frolic hand the circling hours.

Rowden.

Two species of Thyme are natives of Britain, the *Thymus serpyllum*, and *Thymus acinos*; but that which is so commonly cultivated in our gardens, the *Thymus vulgaris*, was introduced to this country from the south of Europe, certainly before the middle of the sixteenth century, though the precise period is not ascertained. It grows wild in stony situations on the hills of Spain, Italy, the south of France, and Greece. The climate of Spain seems peculiarly favourable to its growth, as to that of other sweet herbs. We are told that at Marvella, about midway between Malaga and Gibraltar, sage, thyme, marjoram, lavender, myrtle, and rosemary, grow to the height of *six feet*, and embalm the air on all sides. With us, thyme is but a low, shrubby evergreen, scarcely attaining a foot in height, but so aromatic in smell and pungent in taste as to become a very valuable addition to the herb garden. Its leaves are smooth and oval, and its flowers smaller than those of the wild thyme. Another species, called the citron-scented, or lemon-thyme (*Thymus citriodorus*), is also cultivated for culinary purposes, and is less pungent and more grateful than the common sort. It is a trailing evergreen of small growth, and remarkable for the peculiar scent from which it derives its distinctive name. Both sorts of thyme are perennial, both may be propagated from seed, and both may likewise be propagated from offsets, or partings of the roots, which is the easiest method, and the one most generally adopted.

Thyme was much esteemed and cultivated by the ancients, for the sake of the excellent honey procured from the places where it grew abundantly. The neighbourhood of Athens was said to produce the best honey in the world on that account, for the hills and mountains surrounding that celebrated city were covered with the fragrant herb. Pliny complains that he had great difficulty in raising any of this thyme from seed; for, says he, "It is the nature of Attic thyme not to thrive or live but within the air and breath of the sea." Thyme was also highly prized for affording excellent pasturage for sheep and goats, so that the countries where it was plentiful obtained a considerable revenue by receiving the flocks of Rome, in order that the luxurious city might be supplied with food of the highest relish. It is very well known that our wild thyme has a similar effect in improving the flavour of the flesh of the animals that feed on it, and that venison coming from districts where the herb is abundant, and mutton procured from the South Downs of Sussex, where there is much thyme growing, are prized above mutton and venison in general.

Thyme was highly extolled in former ages as a medicine. Its name is derived from a Greek word which signifies *courage* and *strength*, and it was supposed to possess an extraordinary power in reviving the spirits, and restoring those who were overburdened with toil and fatigue. The Romans considered it a sovereign remedy in cases of lunacy and extreme melancholy, and maintained that the perfume of it alone had

sufficient efficacy to restore from epileptic fits. It was also considered to be an effectual antidote against poison. The medicinal qualities ascribed to it by our old herbalists are also many. Gerard tells us, among many other excellences, that "Time boyled in water and drunken is good against the cough and shortness of breath," and also that "made into a powder, it is good against the sciatici, the pain in the side and breast, and is profitable also for such as are fearful, melancholy, and troubled in mind." It is spoken of in CULPEPER'S *Herbal* as "A noble strengthener of the lungs." It is recommended to be used as an ointment for removing warts and other swellings, and the gout is said to be relieved by thyme, in works of the above class, that we might suppose it a kind of universal remedy, except for a short list appended to some of the descriptions, and bearing the title of *Hurts*. One of the hurts, or injurious properties of thyme seems to be, that when used immoderately it is apt to heat the body.

The essential oil of thyme is a good stomachic; it excites appetite and promotes perspiration. It is likewise useful in easing the toothache, being applied on cotton to the part affected. The culinary use of this herb is extensive. It enters into broths and ragouts, and is a pleasant ingredient in seasonings for meat, more especially lemon-thyme, which gives to them nearly the same flavour as if lemon peel had been used. In former times it was used to impart its peculiar flavour to cheese, in the same way that sage is still used; but we are not aware of its being so employed at the present time. A little thyme mixed with wine is said to give it a grateful savour, a very penetrating smell and taste, and a restorative power to those who are suffering from loss of appetite. The inhabitants of Seville in cleansing their wine vessels, use a decoction of thyme, on account of its pleasing smell, and employ it also in scenting the vessels in which they preserve their grapes.

The culture of thyme is very simple, as both kinds of it are easily propagated by cuttings or slips of the young branches, every bit of which, when planted in the spring, in some shady place, and well watered, is nearly sure to take root. The lemon-thyme spreads very fast, and is all the better for being taken up occasionally, parted, and planted separately in a light soil. If large beds of thyme are required, it will be necessary to raise the plants from seed, which should be sown about the beginning of April, in a light, dry soil, properly dug over and prepared. The seed must not be sown too thickly, or be covered with too deep a layer of mould. The young plants will not be many weeks in making their appearance, and when they have attained a tolerable size, they must be removed to another border, and planted at six or eight inches' distance from each other. They will require to be watered until they have taken root in their new soil, or if the earth is occasionally hoed up between them, they will prosper the better.

A very severe winter will sometimes destroy thyme, but this does not often happen; at any rate, it is well to have a supply of the herb dried for winter use. This must be done by cutting it when it is in blossom, and perfectly free from moisture. It should be hung in an airy, but shady place to dry, and where it can receive no wet from rain or dews, during the drying, and afterwards preserved in paper bags.

We find the thyme (*thymus*) family to be placed in Linnæus's fourteenth class, *Didynamia*, or having two long stamens, and two shorter ones, and in the order *Gymnospermia*, that is, with exposed or naked seeds. The botanical notice respecting wild thyme is as follows:—

It varies with large blossoms, or with broad leaves, or with the scent of lemon-peel used in sauces, or with smooth narrow leaves, or hoary leaves, or shrubbiness, or hairiness, or scentlessness. The whole plant is fragrant, and an infusion of the leaves removes the head-ache occasioned by sitting up at night. Bees are very fond of it, as they are of all aromatic plants

Wild thyme is, indeed, a more beautiful plant than our garden herb, and very pleasant it is to tread on the soft and glowing carpet with which it covers some of our sunny hillocks, to inhale the delightful fragrance it spreads around, and to listen to the low hum of insects, ever busy among its numerous flowers. Shakspeare remembered some beautiful spot rich in floral treasures, when he sang—

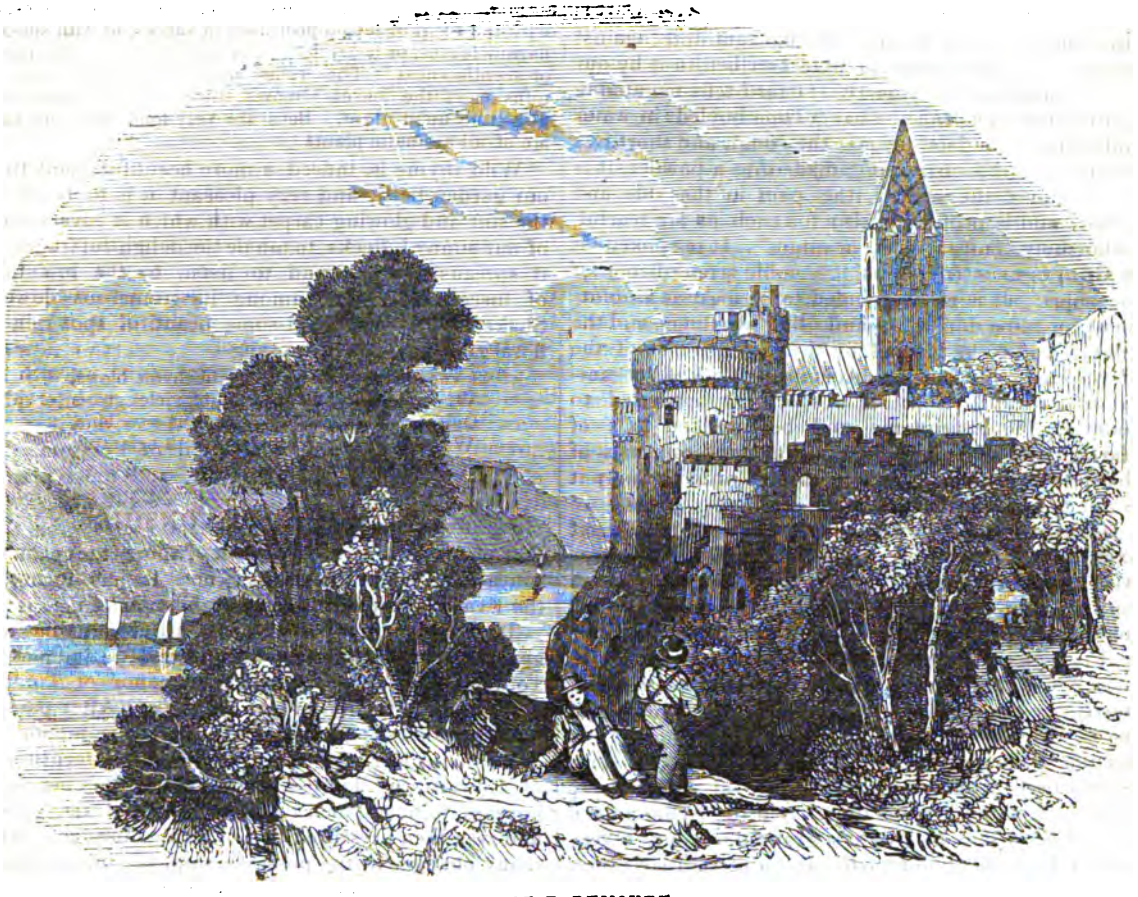
> I know a bank where the wild thyme blows,
> Where ox-lips, and the nodding violet grows;
> Quite over-canopied with luscious woodbine,
> With sweet musk-roses, and with eglantine.

DARTMOUTH, DEVONSHIRE.

DARTMOUTH is a sea-port town of some extent, on the southern coast of Devonshire, near the confluence of the river Dart with the English Channel.

The manor in which Dartmouth is situated was granted by William the Conqueror to Judhael de Totnais, and, together with the manor of Totness, passed to the family of the Zouches. After passing into the possession of other families, the manor became the property of the town, in the fifteenth year of Edward the Third's reign. After this period, it appears to have fallen into the hands of the crown, and was then presented to Lord Falconbridge. After many changes in the possessorship, the manor finally came into the hands of the corporation, in whom it is still vested. In the reign of Edward the Third, the town had a charter presented to it, by which the burgesses were invested with the power of choosing a mayor every year. The corporation, founded by virtue of this charter, consists of a mayor, recorder, two bailiffs, and twelve common councilmen, with other inferior officers. Dartmouth sent members to Parliament as early as the twenty-sixth of Edward the First. An intermission afterwards occurred for a few years, and the privilege was again exercised, and has continued so uninterruptedly.

The town of Dartmouth, considered without reference to the noble sea-view obtained from it, is not distinguished for its beauty, as the houses are in general mean and irregularly built: but still the antique appearance which they present is often picturesque. It is the situation of the town, however, with respect to the sea, that constitutes its striking beauty. It is built on the sloping side of a declivity which sinks gradually to the margin of the water, the streets being arranged above each other at different elevations. The streets of the town are partially paved, and are supplied with water, brought by pipes from springs in the neighbourhood. There are two churches in Dartmouth, belonging to the three parishes of St. Petrock, St. Saviour, and Townstall. The first mentioned church is beautifully situated near the entrance to the harbour. The living of St. Saviour's is in the patronage of the mayor and corporation. The church, which is called the Mayor's Chapel, is a spacious cruciform (cross-like structure,) possessing considerable internal beauty, although the exterior is not very striking. The interior of the church is principally in the decorated style of English architecture; the pulpit is of stone, richly sculptured and gilt; the wooden screen is an elaborate and highly enriched specimen of carving in the decorated style; and the stalls of the corporation are of good modern workmanship.



VIEW OF DARTMOUTH.

It is however as a sea-port that Dartmouth presents the most prominent claim to attention. The harbour is sufficiently capacious for the reception of five hundred vessels, and possesses great security, together with a deep and tranquil bosom of water: it is indeed so sheltered from outward storms, that the surface often remains undisturbed, while the sea, distant only a quarter of a mile from it, is violently agitated. The entrance to the harbour of Dartmouth is on the south, between the ruins of Kingswear Castle and the Fort and Church of St. Petrock, where a battery has been erected for its defence. The harbour or port extends from the river Teign to the river Erme, including a range of coast forty miles in length, and is under the superintendence of a governor, appointed by the corporation and paid by the crown. An artificial quay has been constructed at that part of the harbour opposite the town of Dartmouth, together with a custom-house, and other offices requisite for the despatch of business. No less than three hundred and fifty vessels belong to the port, averaging seventy-two tons' burden each. The trade which these vessels carry on is chiefly with Newfoundland, the English coast, and the collieries. There is, as may be supposed, considerable trade carried on in ship-building, for which purpose commodious dock-yards have been constructed; but the inhabitants are principally engaged in the Newfoundland and other fisheries, in which more than three thousand persons are in one way or other employed.

A recent writer, speaking of Dartmouth, observes:

The surrounding scenery is strikingly beautiful: the view of the town from the bay is strikingly picturesque; and the rocks, which are of a purple coloured slate, are finely contrasted with the verdant foliage of the trees in which the houses are embosomed, extending for nearly a mile along the coast, and interspersed with a rich variety of plants and shrubs. The bay, in several points of view, from which the town and the sea are excluded by projecting rocks, has the appearance of an inland lake, noted for its romantic beauty.

The river Dart, the port to which it gives the name of Dartmouth, and the elevated district from which it springs, and to which it gives the name of Dartmoor, have all been celebrated by Carrington, the Devonshire poet, in his poem of *Dartmoor:*—

How drear the stillness brooding o'er thy lake,
Secluded Cranmere, yet from thee flow life
And boundless beauty; thine the arrowy *Dart*,
Fleetest of rivers. Though the desert lifts
Awhile its tors above him, yet he sweeps
Full soon impatient down to vales of bliss—
Lovely as thine, Ausonia.

* * * * *

The voice of *Dart*
Is loud and hoarse, his cataracts uplift
Their roarings to the woods; but Oh! how sweet
The music of his gentler tones! for he
Has tones of touching sweetness. Ye who love
The thunder and the melody of streams
That from the mountain lead, careering on
Through foam and conflict ever,—seek the bank—
The varied bank of Dart. Oh! that my feet
Were free, *Holne Chase*, to linger in thy depths,
Profound of shade; while deep below he rolls
Where scarce the eye the flashings of his flood
Discerns between the foliage. Yet anon
He spreads his bosom to the beam, and shoots
By vale, and hill, and precipice, and cliff
Wood-crowned, and smiling cot, and mansion veiled
In clustering leaf, until he proudly blends
With *Dartmouth's* echoing wave. And as he flies
Like the winged shaft, the wanton zephyrs breathe
Delicious fragrance; for upon his banks,—
Beautiful ever,—Nature's hand has thrown
The odorous myrica.

The *Cranmere*, mentioned in the above lines, is an elevated spot surrounded by a morass, from which

springs one of the two sources of the river Dart; the point of conjunction of the sources being called Dartmeet. Holne Chase is a tract of land extending about two miles along the Dart, near Ashburton; the upper part rocky, and the lower woody. The *myrica*, alluded to in the last line, is the Devonshire myrtle.

Dartmouth had the reputation of giving birth to one of the distinguished improvers of the steam-engine: we mean Newcommen. He was a locksmith at Dartmouth, towards the close of the seventeenth century; but, notwithstanding his humble situation, he engaged in scientific researches, and carried on a correspondence with his celebrated countryman, Dr. Robert Hooke, to whom he communicated his projects and inventions. Newcommen, having had his attention excited by the schemes and observations of the Marquis of Worcester, and of Papin, relative to the steam-engine, as well as Captain Savary's proposal to employ the power of steam in draining the mines of Cornwall, conceived the idea of producing a vacuum below the piston of a steam-engine, after it had been raised by the expansive force of the elastic vapour, which he effected by the injection of cold water to condense the vapour. Newcommen, in conjunction with others, took out a patent for his invention. This invention was one of the many steps by which the steam-engine gradually attained its subsequent and still increasing importance.

ON KREASOTE.

WHEN charcoal is prepared by the destructive distillation of wood, in the manner described in our account of the preparation of charcoal for gunpowder, (*Saturday Magazine*, Vol. XIV., where drawings of charcoal furnaces are given,) several products are obtained, which may thus be arranged:—1st, gaseous matter, 2nd, volatile empyreumatic oils, 3rd, empyreumatic resins, 4th, aqueous products, and 5th, charcoal. Among the liquid products, the most valuable are pyroligneous acid, or wood-vinegar; pyroligneous ether, or wood-spirit; and *kreasote*. We are about to invite the reader's attention to the remarkable properties of the last mentioned substance.

KREASOTE is present in crude pyroligneous acid, but is most conveniently obtained from that part of the oil distilled from wood-tar, which is heavier than water. The process is, however, very tedious and complicated, and not sufficiently interesting to the general reader, to be stated here. Kreasote was discovered by Dr. Reichenbach in the year 1832; and there can be no doubt that the process for obtaining this substance will be greatly abridged, when chemists are better acquainted with its properties.

In its pure state, kreasote is a colourless, transparent, oily liquid, somewhat heavier than water; it has an oily feel, and leaves a greasy stain on paper, which stain disappears after some time: its odour is peculiarly penetrating and disagreeable, like that of over-smoked meats; when applied to the tongue, it produces great pain and corrodes it; the taste is burning and caustic, exciting the flow of saliva, and leaving an impression of sweetness. Kreasote evaporates on exposure to light and air. It boils at 397°, and retains its fluidity at —17°; that is, at 49° below the temperature at which ice melts. It has an unusual degree of refrangibility, and when diffused in thin films, it displays very vivid and beautiful colours. It can be distilled without change, and when used with a wick, instead of oil, it burns with a strong sooty flame. It does not conduct electricity: it is neither acid nor alkaline, but unites with some acids and alkalis. It is soluble in eighty times its own bulk of water; but is freely soluble in alcohol and ether. It is decomposed by nitric or sulphuric acids.

A singular property of kreasote is that of instantly coagulating albumen; such, for example, as the white of egg. A considerable quantity of albumen exists in the blood of animals; hence the value of kreasote as an external application in stopping the flow of blood from wounds, leech-bites, &c. It has also been found useful in many cutaneous diseases: but great care is necessary in its application; for, being a powerful poison, it may produce death by being absorbed into the system. When considerably diluted, it is given as an internal remedy in cases of nausea, sea-sickness, &c.; and it is said to create a sensation of warmth in the stomach; if the dose be repeated at short intervals, it produces intoxication. Animals, fishes, and insects, plunged into a very dilute solution of kreasote, die immediately in strong convulsions, and most plants are killed by being watered with this solution.

Kreasote is truly admirable as a remedy for the tooth-ache: that is, in such cases where the pain is occasioned by decayed teeth; and it has recently been applied with success in certain cases of deafness.

But there is no property of kreasote so valuable and remarkable as that from which it derives its name, viz., its *antiseptic* property. The term is derived from two Greek words, signifying *preserver of flesh*. Wood-smoke has long been employed in curing and flavouring hams, tongues, sausages, together with many kinds of fish, as the spacious chimneys of our farm-houses amply testify. Now it has been shown that the peculiar antiseptic property of wood-smoke, is due to kreasote obtained from the wood-fuel, in the process of burning. We would also suggest that the peculiar smell, which is remarked by the traveller, on entering many of the continental towns where wood-fuel is alone used, is due to the same cause. The kreasote, from the wood being converted into vapour, passes with the smoke into the air, and thus this powerful substance may impart an odour to a whole district; especially when there are several hundred or thousand wood-fires burning at the same time. Pyroligneous acid and tar have the same antiseptic properties as kreasote, but in a smaller degree. The acid was long ago used in the process of curing provisions on a larger scale, in preference to the more tedious process of smoking. Meat, or fish, placed for a few seconds in pyroligneous acid, and then hung up to dry, acquire a fine flavour, and can be kept for a long time. Beef salted for six hours, and then placed for three minutes in the acid, and allowed six days for drying, was found to be equal to the best Hamburgh beef, and could be kept as long. A large number of haddocks was prepared by a similar process with favourable results. Herrings, steeped in the acid for three hours, were found to have acquired too strong and full a flavour; but when boiled, and then simply dipped into the acid, the flavour was very agreeable. In anatomical preparations kreasote has been employed with singular success; and the addition of a few drops of kreasote to the spirit of wine, in which such preparations are preserved, is of the greatest efficacy. In stuffing birds, and in other illustrations of Natural History, there can be no doubt of the advantage of employing this useful article.

The application of tar as a preservative of timber, cordage, &c., is very great: its efficacy in this respect is due almost entirely to the presence of kreasote.

A solution of kreasote in water exhibits antiseptic properties surpassing those of the pyroligneous acid just named. Fresh meat, on being soaked for half an hour in kreasote water, may be exposed to a sum-

mer's sun for days together without acquiring any taint; on the contrary it becomes dry and hard, and has the flavour of good smoked meat. Such meat, however, should not be boiled, because the flavour becomes by that means unpleasant: it may be eaten uncooked, after the German fashion, or it may be broiled or toasted.

A few drops of kreasote to as many gallons of ink will effectually prevent mouldiness. When added to whiskey, it gives it the *peat* flavour; and we may state, that a large quantity of the so called "genuine" Hollands, sold in London, is nothing more than gin, or cheap whiskey, with the addition of a little kreasote.

ON SKILLED LABOUR.

No. III.

In our former papers on this subject we have shown the importance of skilled labour to society, and of an apprenticeship to one or other department of it, to the children of our peasantry. We proceed to point out the means by which even poor parents may best secure this inestimable advantage for their children.

Let us first make one remark. It is of great importance that the proportion of boys apprenticed to different trades should be regulated by the demand for work in those trades. To illustrate this, let us suppose that all the youth of England were bound by settled laws, as unchangeable as those of *caste* in India, to divide themselves among certain trades in fixed proportions. The inevitable consequence would be, that some kinds of skilled labour, owing to an excess in the number of boys apprenticed to them, would come to be underpaid, while the wages in others would, from the opposite cause, become so exorbitant as to invite foreigners to compete with native workmen; a result which should only happen in the case of native workmen being found inadequate to supply *all* departments of skilled labour, after being fairly portioned out amongst them. To be sure, the changes constantly going on in society enable us, at the best, only to approximate this proportioning of the supply to the demand for skilled labourers. Thus, at the present day, the demand for working engineers, a class of workmen our forefathers hardly had any demand for, is rapidly augmenting, while we suspect there are now more farriers and horse-keepers than are needed, owing to the number that the railways must have thrown out of employment. Such changes the peasantry of Scotland, in their hereditary eagerness to avail themselves of everything that can be turned to the advantage of their children, are quick to observe; and, perceiving the growing demand for working engineers, they add that to practical husbandry, gardening, forestry, and other branches of skilled, we may even say scientific, labour, in which thriving Scotchmen are to be found in their own and other countries, thanks to the affectionate and intelligent foresight of the humble parents who piloted their early course from the quiet haven of some secluded village into the wide sea of life. These remarks we particularly recommend to the patrons of industrial schools. We cannot but think that there is danger of an excess of labourers in the kinds of skilled labour which these schools patronize, unless a careful out-look is maintained by their directors.

But how shall a poor couple, earning, perhaps, at most, from ten to twelve shillings a week, contrive to secure for a numerous family the industrial skill by which their children, on becoming parents in their turn, may earn from twenty to thirty shillings a week. Apparent impossibility in such a case is apt to produce despair, which, in turn, is the death of all strenuous endeavour. But such a feeling is most unworthy of Christian parents. They have something more than their own endeavours to look to. They have the promises of the providence of Him who can make small means effect great ends in his own good time and way, but who will grant nothing to the fearful or the slothful. Indeed, in every point of view, it is well that the humble cottager and his partner in life should keep their thoughts ever directed to the God, to whom their united prayers ought daily to ascend, else the love they bear their children, becoming a merely selfish and earthly passion, even when most hopeful and strenuous, may degenerate into parsimony, covetousness, and avarice.

Poor parents cannot begin too soon to lay by savings and what are called God-sends, however small, for their children's future good. How often does a foolish indulgence of their children's appetite or vanity induce them to spend in small sums what, in a course of years, if carefully saved, might secure the greatest advantages to those very children in after life; and the indulgences thus foolishly wasted, may meanwhile be hurting the health and injuring the morals of the child. Ill health and bad passions are the two grand causes of unhappiness in children. Now to guard against the first, nothing is more important than plenty of the simplest food, given at regular times; while giving a child dainties between meals, by disordering his stomach, makes present gratification to be dearly purchased by perhaps an obstinate derangement of the child's health, revealing itself in fretfulness and general disease. Again, though the gratification of a child's vanity in dress seems a more harmless kind of indulgence, how much better to clothe both boys and girls with the utmost simplicity, and to let them know that whatever is thus saved, is not the less intended for their comfort, but is reserved for the more important wants of their riper years. The very lesson of forethought, thus given to them, is valuable.

We would not have children trained to fondness of money. It is a most degrading passion—stamped with the peculiar reprobation of God himself in Scripture. But they ought to be taught to regard money, in every case, however apparently trifling the amount may be, as a talent which we must not waste, and for which we must give account to Him who marks the widow's mite and its destination. Children should be early taught the right uses of money, and the poorest should learn not only how to save it from being needlessly spent, but also cheerfully to devote it, when an occasion offers, to some good or kind purpose.

And if parents ought to check, instead of encouraging, the indulgence of appetite and vanity in their children, so especially ought they to keep down those vices in themselves. We fear the rich are much to blame for the weakness of the poor in this respect. How many a servant girl, on becoming a laborious man's wife, takes with her into her new home a taste for luxurious living and gay clothing, acquired in the families where she has served—families, perhaps, who professed being followers of the meek and lowly Jesus, and whom the dignity of being sons of God, ought to have raised above the passion for splendour of outward appearance. Those mistresses show the truest sense of their dignity who shame their servants out of expensiveness of dress by their own simplicity in that respect.

While an affectionate regard for their children's future comfort, ought to lead parents in the rank of life to which we address ourselves, to avoid all need-

less expense, they ought to be no less careful to shun all dishonest gains. There is a kind of low cunning which too often passes for wisdom among our peasantry, but which, in reality, is the greatest folly. It is shown sometimes in flattering and fawning upon their more wealthy neighbours, and teaching their children to do the same, for the sake of paltry advantages, exorbitant returns for slight services, and the like. All this is but to give children the idea that if they are to rise in the world at all, it must be by cajoling or cheating the rich and the simple; whereas, next to the fear of God, and the keeping of his commandments, a manly independence and superiority to everything low and base, are the surest foundations of a steady, though possibly a slow rise; and even though it should please God to keep a man's family always poor, with such qualities they will always be respected by those whose respect is worth the having.

Poor parents are sometimes tempted to what is certainly a more honourable, but still a bad means of making sudden gains, and that is undertaking piece-work beyond their proper strength. We have seen this attended by the worst consequences. In order to fit the body for extraordinary exertion, the labourer is tempted to eat and drink to repletion, to take strong drink, and to do everything in a hurry, so that his life is spent between sleep and violent exertion; no time for prayer, for quiet enjoyment of his home, for watching the tempers and the habits of his children, and relieving the cares of his wife. Thus soul and body both suffer for the sake of a sum which, with regular industry and economy, might be acquired, perhaps not so quietly, but far more safely.

We now come to the devices by which a labouring couple may add to their regular earnings, by improving to the best advantage their savings. These are so various, and depend so much on the peculiar circumstances of different places and occupations, that no one rule can be given for all. Some places on the coast are favourably situate for the men engaging in the herring fishery during the season for it, though employed in land trades for the rest of the year; and we know small towns and villages, where tailors, shoemakers, weavers, in short the whole male population in that rank of life, club together in parties of three, four, or five, provide boats, with their fishing-gear, go off to the North Sea herring fishery, and divide the profits according to certain pre-arranged proportions,—so much for the capital furnished, so much for each man's time, labour, and skill. The Dutch carry this still further, as may be seen from our papers on the Dutch fisheries. On some parts of the coast, women and children as well as the men add to their earnings by collecting shell-fish, shrimps, &c.

But there is no part of the country, however remote from the sea, or from markets, in which the labourer or artizan, who keeps such an object steadily in view, may not eke out his usual earnings by some employment of a different kind, and common sense will show that it ought to be different, as thus only it becomes a recreation, instead of a labour. Thus a hand-loom weaver will find relief in the occasional use of the spade and hoe, while the hedger and ditcher would be found quite incapable of doing so, though he might find it an amusement to sit by the fire-side, talking to his wife and children, and at the same time netting, making baskets, mending shoes, or knitting stockings. Not that even he should give up the idea of having a little garden of his own, for that need not make any serious addition to his out-of-door employments; and it is what his wife and children may so far assist in making productive. The child that is too young to dig may at least gather stones and pick out weeds; and what is of great consequence, learn lessons of trust in Divine Providence; and a love of honest industry, as he sees the sun shining and the rain descending on the little family store of potherbs, and potatoes, and common flowers, that owe their existence to the frugality, and prudent management, and unceasing industry of his father and mother.

But the most instructive and encouraging examples of success in providing a skilled education, or apprenticeship for children, are to be found where a number of families co-operate for their common advantage in adding to their regular earnings; where, in short, a whole little community has gradually adopted a complete system of such co-operation, nicely fitted to their peculiar circumstances, in which all may take a part, and where, in addition to other advantages, all become so linked with each other as greatly to promote those kindly habits of mutual assistance and sympathy which ought ever to distinguish a Christian community. To this we must devote a separate paper.

Man has never woven a tapestry like that which May spreads beneath us, in its green and flowery meadows; and where are the imitative works of art that can compete with a flower-garden, can even approach to a single flower? But we admire the imitations, and almost forget to look at the reality and the original. Yet while the former are costly, or even inaccessible, the others are given freely, without cost, and they are given freely to all. The Creator has even empowered us to create for ourselves, and almost without labour, beauty which no art can approach, and no price could teach it to rival. We sow a few seeds in a few minutes, and we become artists, under the kindness of the Great Artist, producing pictures, imperfect imitations of which we must have purchased with gold, as not all the gold of the universe could have stimulated an artist to approach to them.—Macculloch.

Ye venerable groves! whose open glades
Invite the musing wanderer to your shades,
Ye birds! whose honied notes enthral the ear,
Wake the bright morn, the darksome evening cheer,
Ye fountains! murmuring music as ye flow,
Ye flowers! that on their purple margins glow,
Ye winds! that o'er those flowers soft breathing play,
Calm the hot sky, and mitigate the day;—
Take me, O take me to your loved retreats;
All, all conspire to bless me with your sweets.
Here in your soft enclosure let me prove
The shade and silence of the life I love!
Not idle here;—for, as I rove along,
I form the verse, and meditate the song;
Or mend my mind by what the wise have taught,
Studious to be the very thing I ought.
Here will I taste the blessings of content,
No hope shall flatter, and no fear torment:
Unlike the sea, the sport of every wind,
And rich with wrecks, the ruin of mankind,
My life an honest, humble praise shall claim,
As the small stream, scarce honoured with a name,
Whose gladdening waters through my garden play,
Give a few flowers to smile, then glide away.

Bishop Hurd.

The best foundation of peace of mind is the testimony of conscience: a sense not of perfect innocence, and of the merit of works, which would be vanity, arrogance, and a folly; but a sense of having lived before God, in sincerity and without hypocrisy,—without wilful, deliberate, presumptuous, and continual disobedience.—Archdeacon Jortin.

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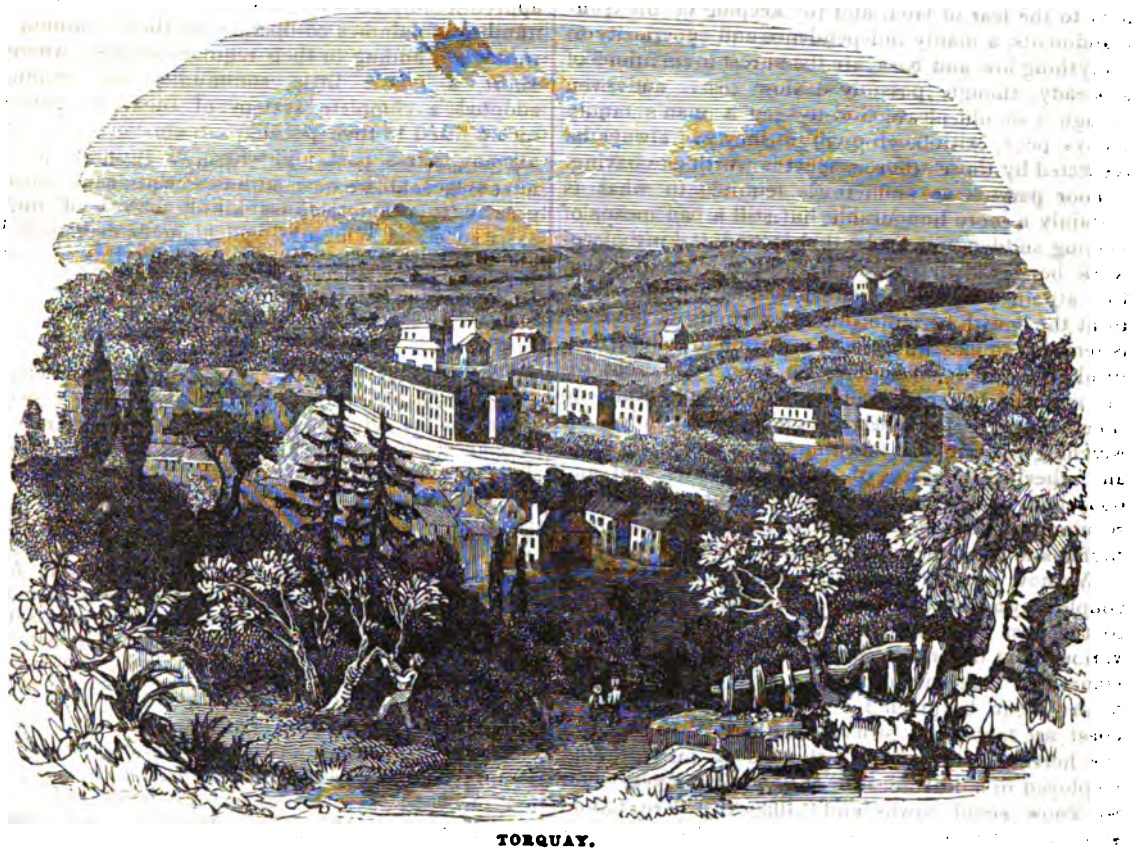


TORQUAY.

On the southern coast of Devonshire is situated a bay, remarkable for the beauty of the shore surrounding it. This is called *Torbay*, and constitutes a sheet of water nearly quadrangular, being about five miles broad from north to south, and about four miles in depth from east to west, the bay looking out directly eastward, and being overlooked on the north by Torquay, on the south by Brixham, and on the west by Paignton.

Torbay is deemed one of the finest roadsteads on the British coast. Vespasian is said to have landed here when he came over to attack Arviragus, king of Britain. William the Third entered Torbay, with his fleet under Admiral Herbert, and landed at Brixham, Nov. 4, 1688. At the period of the revolutionary war in France, Torbay became frequently a place of importance, from being a rendezvous of the British fleets; and at a subsequent period Bonaparte was brought a prisoner into Torbay, on board the Bellerophon, July 24, 1815.

The word "tor" which frequently occurs in Devon topography, was a Celtic name for a beacon or fire-tower, and became in time applied to the hills upon which the beacons were erected: such was the case with High Tor, South Brent Tor, Three-barrow Tor, Sharp Tor, Hamil Tor, and Tor-Mohun. Tor-Mohun is situated not far from Torquay, and gives its name to a small village, as well as to the parish which contains Torquay: this, then, is the circumstance which gives rise to the names of Torbay and Torquay. The manor of Tor-Mohun was originally called Tor-Brewer, from a distinquished family of that name, who possessed the manor in the time of William the Conqueror. By a marriage between the families of Brewer and Mohun, in the reign of Henry the Third, the manor acquired the title which it has ever since borne; and Torquay has gradually grown up in the manor.

Torquay is eminently calculated for a watering place where invalids can sojourn for the benefit of their health; and it has consequently acquired those conveniences which never fail to follow under such circumstances. There are two or three excellent hotels erected directly in front of the sea. A market was some years ago built by Sir L. V. Palk, Bart., in which is an abundant supply of meat, fish, poultry, vegetables, &c., on Tuesdays and Fridays: the fish, in particular, is good, abundant, and cheap, and is brought from Brixham, on the other side of the bay. There is an assembly room adjoining the Royal Hotel, in which balls, assemblies, public meetings, concerts, &c., are held. Besides two or three libraries, there is a book-society, and other means of extending literary amusement. At the extremity of the pier are situated the baths, erected by a medical practitioner of Torquay, who is their proprietor. The sea water ebbs and flows

with the tide, through the wall of the pier into a spacious reservoir, from whence it is pumped for use into the cisterns of the baths: by this arrangement, sea-water is procured freed from sea-weed and other impurities. Many institutions of a praiseworthy character have sprung up in Torquay; such as the Torquay Society for the Diffusion of Religious and Useful Knowledge; the Torquay Branch Association, in connexion with the Society for Educating the Poor of Newfoundland; the national schools, for the education of poor children on Dr. Bell's system; Sunday schools, not connected with the national schools; a society for clothing poor children, on the payment of one penny per week for each child; a general fund for the relief of the poor in case of sickness, losses, or severe distress; and others which we cannot here enumerate.

There is no church, properly so called, at Torquay; but Tor-Mohun church is situated within walking distance of the town, and has divine service performed in it twice every Sunday: it is a plain and simple building, about 70 feet long, by 42 wide, with two aisles communicating with a nave by four arches: the singing gallery bears the date 1760; and panels are ornamented with heraldic shields of some of the distinguished families who have lived near the spot: this church is a perpetual curacy. At Torquay is a chapel belong to the national establishment, being properly a chapel of ease to the parish church at Tor-Mohun, of which we have just been speaking; it is a plain, unornamented building.

It is chiefly the lovely situation of Torquay that has brought it into note; for there are but few other circumstances likely to give it eminence. The salubrity of the town arises from its peculiar position. It is completely sheltered, on the north-east and west, by hills of very considerable elevation, on the declivities of which are detached houses and terraces, some of them very handsome buildings; and the heights on which they are situated being richly clothed with wood, their appearance is very picturesque. About fifty years ago, Torquay was only an insignificant fishing village; but the beauty of its situation led to various improvements which have gradually converted it into a fashionable watering-place. The first of these improvements was the construction of a pier, for which an act of parliament was obtained, through the instrumentality of Sir L. V. Palk, to whom the town is otherwise indebted: the pier was commenced in 1804, and finished in 1807. Since that period, another pier has been constructed, by which a secure basin has been formed, 500 feet long and 300 broad. Torquay has a trifling share in the Newfoundland fishery, and possesses also a few coasting vessels.

In the neighbourhood of Torquay is a remarkable cavern, which has attracted a good deal of attention. This cavern, which is called Kent's Cavern, is about 500 feet in length, and stalactites are observed hanging from the roof in the most graceful forms; but what is of more importance in a scientific point of view, is, that organic remains of animals, belonging to species no longer existing in England, have been found here. Several scientific gentlemen in the neighbourhood drew attention to this circumstance, and afterwards Dr. Buckland visited the spot. The remains of the hyæna are very abundant; and there are numerous bones of the elephant, the rhinoceros, the elk, the tiger, and many smaller animals, particularly some belonging to the tribe *Rodentia*. A large number of teeth have been procured, in various stages of their growth. There seems to be reason for thinking that there are many other caverns yet undiscovered in the neighbourhood of Torquay.

The qualifications of Torquay, as a place of residence for invalids, have attracted the attention of physicians, one of whom, Dr. Clarke, has stated at some length his opinions on this point. According to him, the general character of the climate of this coast is soft and humid; but that Torquay is drier than most other places on the coast, and almost entirely free from fogs. This drier state of the atmosphere he attributes in part to the vicinity of lime-stone rocks, and partly from its position between the two streams, the Dart, and the Teign, by which the rain is in some degree attracted. Not only Torquay, but a beautiful tract of country near it, is completely sheltered from the cutting winds which are so dangerous to invalids. The mildness and softness of a south-western aspect are possessed by Torquay in a peculiar degree. Dr. Clarke observes:—

> What may be the real estimation in which the climate ought to be held in consumptive complaints, and what may be its absolute effect upon these, I have much difficulty in saying; but this I may venture to advance, that as the invalid will be exposed to less rigorous cold, and for a shorter season will have more hours of fine weather, and consequently more exercise in the open air; he gives himself a better chance by passing the winter here than in any more northern part of our island. To compare it also in this respect with the climate of the southern continent of Europe, is no easy task. In the south the invalid has finer days, and drier air, and more constant weather; but the transitions of temperature, though less frequent, are more considerable. In the night, I believe, invalids are often exposed to severer cold than here; and this arises partly from the great range of temperature, and partly from the imperfect manner they are protected from the cold at night, by the bad arrangement of the houses, chimneys, &c.

There is a very favourite excursion for persons residing in or visiting Torquay. This is to proceed from Torquay to Totness; then down the river Dart to Dartmouth; cross from Dartmouth to Brixham; and finally skirt the whole of Torbay from Brixham to Torquay. From Torquay to Totness is about ten miles. This last-mentioned place is of great antiquity, being celebrated from the time of the Roman invasion of Britain: it was formerly surrounded with walls, and had four gateways, the eastern and northern of which are still nearly entire. From Totness, pleasure-boats go down the river Dart to Dartmouth, a sea-port town of considerable importance. On the opposite side of the estuary of the Dart is the town of Kingswear; and from thence to Brixham is a distance of about two miles and half. Brixham is one of the most considerable fishing towns on the southern coast. Upwards of one thousand men and boys, and more than one hundred vessels, are employed here in the fishing and coasting trades, chiefly the former. Turbot, soles, plaice, whiting, mackerel, thornback, gurnet, flounders, and many other kinds of fish, are caught, and sent to the Exeter, Bath, Bristol, and London markets. The weekly returns from this trade alone are said frequently to amount to 1000*l.* per week; and it is probable that when the railway system is brought more completely into operation, the fishing trade will still further increase, on account of the facility of conveying the fish inland. About one quarter of the manor of Brixham belongs to some of the fishermen of the place. We said in a former paragraph that it was at Brixham that William the Third landed, in 1688. On that occasion a curious address was presented to him by the inhabitants in the following words:

> And please your Majesty King William,
> You're welcome to Brixham quay,
> To eat Buckhorn and drink tea
> Along with we,
> And please your Majesty King William.

The "buckhorn" here alluded to, is a provincial name for dried whiting,—whiting being a very abundant fish on the neighbouring coast.

Leaving the port of Brixham, we coast the bay, from thence to Paignton, a spot much celebrated for the fertility of its soil. The manor of Paignton belonged, before the Norman conquest, to the see of Exeter, and was a favourite resort of many of the bishops, who had a palace here: this palace is now in ruins, a short distance from the church, and completely covered with ivy. The church is a handsome edifice, with a fine Norman doorway.

From Paignton, a road leads through Tor-Mohun to Torquay, passing at the back of Tor-Abbey. This ancient building is now the seat of G. H. Carey, Esq., in whose family it has remained for nearly two centuries. The building consists of a centre and two wings, the western being connected with a castellated gateway, with octagonal towers and battlements. This was an old monastery founded by William Lord Brewer, in 1196; and was the best endowed monastery of the Augustine order in England. There was a regular succession of abbots from Adam, canon of Welbeck, who first settled here in 1196, to Simon Rede, the last abbot, who surrendered the revenues to Henry the Eighth, and received a pension of 66*l.* 13*s.* 4*d.* per annum.

GARDEN HERBS. IV.

Sage, (*Salvia.*)

Common garden sage is a hardy, well-known perennial plant, very full of stalks, four-square, and of a woody substance, with whitish, wrinkled leaves, which possess a peculiar but not unpleasing smell. At the top of the branches appear insignificant purplish flowers, in the place of which follow small black seeds, contained in husks. Sage was brought to this country from the south of Europe, about the year 1573, and soon became extensively cultivated. The family to which it belongs is a very large one, containing a great number of herbs and under-shrubs, which are found diffused over a large portion of the earth. Of these some are highly ornamental, and are ranked among our most beautiful greenhouse plants. They possess the advantage, in common with the humbler members of the same family, of being easily propagated by cuttings. There are also the meadow-sage, and the wild clary, common to our own soil; and in our gardens we frequently cultivate the variegated sage, thus spoken of by Gerard. "We have in our gardens a kind of sage, the leaves whereof are reddish; part of those red leaves are striped with white, others mixed with white, green, and red, even as Nature lists to play with such plants. This elegant variety is called *Salvia variegata elegans*, variegated, or painted sage."

Common sage has a powerful and fragrant smell, and a warm aromatic taste: it received its name of sage from the French word *sage* (wise,) on account of the property ascribed to it of strengthening the memory, and thus making people wise; while the name of *salvia*, applied to the whole genus, is derived from the word *salvus*, and denotes the healing properties of the herb.

It is curious to observe the various uses to which sage was applied in former days, and the low estimation in which it is held at the present time. *Then* it was recommended as a remedy for nearly all the diseases the flesh is heir to, so that it was said, "Why should a man die, while he has sage in his garden?" *now* we scarcely hear of it except as a seasoning for strong meats, sausages, ducks, &c.

Some of the medicinal uses of sage, according to the old writers, are the quickening of the senses and memory, the strengthening of sinews, restoring those who have the palsy, curing consumption, fortifying the nerves, removing tumours, &c., &c.

No one need doubt of the wholesomeness of sage-ale, (says Gerard,) being brewed as it should be with sage, scabious, betony, spikenard, squinanth, and fennel seeds. The leaves of red sage, (says the same writer,) put in a wooden dish, wherein is put very quicke coles, with some ashes in the bottome of the dish, to keep the same from burning, and a little vinegar sprinkled upon the leaves lying upon the coles, and so wrapped in a linen cloath, and holden very hot unto the side of those that are troubled with a very grievous stitch, taketh away the paine presently.

Culpeper recommends the juice of sage to be taken in warm water, for the relief of hoarseness and cough, and also prescribes it, together with other "hot and comfortable herbs," to be used in baths, for the comfort and restoration of cramped limbs. Orpheus says that three spoonsful of the juice of sage, taken fasting with a little honey, "doth presently stay the spitting of blood in them that are in a consumption:" we have likewise directions for making sage-pills, which are said to be of almost universal efficacy. The recipe is as follows:—"Take of the seed of sage toasted at the fire eight drachms; of spikenard and ginger, each two drachms; of long-pepper twelve drachms; reduce them to powder, and add enough sage-juice to make them of the proper consistency. Make them into pills, and take a drachm of them every night and morning."

The odour of sage, when inhaled for a considerable time, produces a feeling of intoxication. Dr. James tells us, that on examining this plant on an empty stomach, he found himself almost drunk with the smell of it. This herb, together with all the other species of sage, has something of the nature of the *Quercus*, or oak, and is therefore astringent and exciting to the nerves. Boerhaave affirms that persons who have for years together laboured under an infirmity or debility of the stomach, have received great benefit from taking the conserve of sage. The aromatic oil of sage is said to be good for rheumatic complaints. An infusion of the leaves in water is of a deep colour, similar to tea, and ink may be made with it, as well as with galls. In the Levant, large galls were seen by Tournefort, growing on the sage, which were caused by the punctures of insects; these galls are firm, fleshy, semi-transparent tumours, swelling out from the branches of the plant, and supposed to be produced in the same manner as oak-apples, by the puncture of an insect of the *Cynips* genus. They form an article of ordinary sale in the markets, and are called sage-apples. When preserved with sugar, these apples are regarded as a great delicacy. Dr Clarke was regaled with them by the English consul, at the island of Syros, and speaks highly of their excellent flavour. The plant which is subject to these excrescences is much larger than the common sage, and has a more powerful smell. It grows abundantly in several of the Greek islands, and attains the size of a small shrub.

Sage tea has been used as a gargle for the mouth and throat, and is said to preserve the gums from scorbutic complaints, and to fasten loose teeth.

Sage cheese was formerly held in high esteem, but is now comparatively rare. For a cheese of the ordinary size weighing from eight to twelve pounds, two good handsful of green sage, half a handful of parsley, and half a handful of marigold leaves were bruised and infused all night in a sufficient quantity of milk, to extract their colour. This coloured milk was mixed with about a third part of the milk intended for curding, and the milk thus coloured was

kept separate from the rest during the processes of coagulation, draining, scalding, &c. When the pure curd and the green curd were each minutely broken up and ready to be put into the vat, the dairy-woman formed the green curd into regular designs, or blended it with the white, according to her own fancy. Tin or wooden moulds are sometimes made use of in forming the pattern. In Gloucestershire this sort of cheese is still made, and the concluding process is as follows. When the curd is to be put into the vat, the designs, or pieces of green curd are placed first at the bottom. The white curd is then crumbled over and between them. As the vat fills, the pattern is formed at the sides in green curd, and lastly at the top, when the cheese is subjected to the usual pressure.

The dried leaves of sage are so highly esteemed by the Chinese, as a substitute for tea, that they have frequently expressed astonishment at the taste of Europeans, in preferring the product of the tea-plant, and taking such long voyages to procure it, when they have a herb of such superior flavour in their own country. The Dutch traders have long been in the habit, therefore, of transmitting to China great quantities of sage in a dried state, the growth of their own country, and also of the south of France; this they send out in cases, and get in exchange for every pound of sage, four pounds of tea.

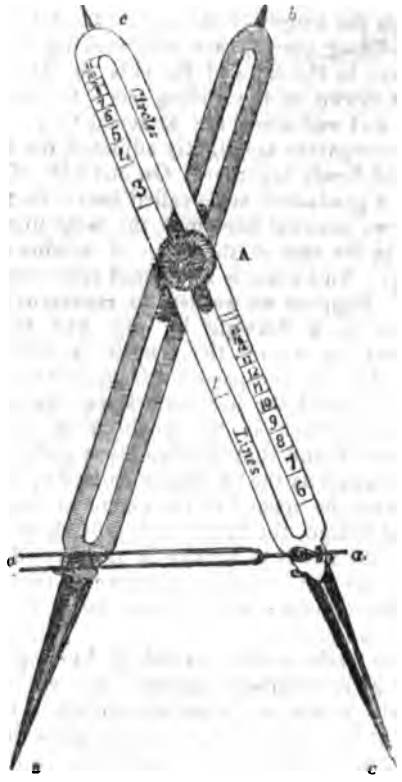
Sage may be raised from seed or from slips. When dried for winter use, it should be cut before it comes into blossom; this should be observed also with respect to the other herbs.

ON PROPORTIONAL COMPASSES.

THE word *compass* has many significations, even if we confine its use to instruments employed for scientific purposes. For instance, there is the mariner's steering-compass, that invaluable piece of magnetised steel, which enables him to determine towards what quarter of the horizon he his steering his ship. There is the azimuth-compass, employed in nautical astronomy as a check upon the steering-compass; as well as pocket-compasses, which give a proximate intimation to land-travellers, of the way in which they are travelling. All these owe their efficacy to the fact of the *poles* or extremities of a magnet being attracted towards certain spots in the northern and southern hemisphere of the earth.

But the word *compass*, or *compasses*, used with reference to drawing, geometry, perspective, and such like sciences, refers to a very different kind of instrument; such as is used to take the *compass* or dimensions of a line, superfices, or solid; and of these there are various sorts. The *common compasses* consist of two sharp-pointed branches or legs of iron or brass, with a convenience for replacing one of these legs with another, containing a pen or a pencil-case. *Triangular compasses* have an extra leg, and are employed to take three points at once. *Beam-compasses* consist of a long beam or branch, carrying two brass cursors or sliders, to which may be fixed a pencil, pen, &c. These are for the purpose of drawing large arcs, and taking off divisions with great exactness. *Clockmaker's compasses* are joined like the common compasses, with a quadrant or bow so adjusted, as to keep the instrument firm at any degree of opening. *Cylindrical and spherical compasses* consist of four branches joined in a centre, two of which are circular, and two flat, a little bent on the ends: their use is to take the diameter or thickness of round bodies, such as cannons, pipes, &c. *Elliptic compasses* are an ingenious contrivance for drawing an ellipse. *Spring-compasses* have a stout spring to keep them open at any desired point. PROPORTIONAL *compasses*, a contrivance for performing certain problems in proportion. It is to this last that we shall direct our attention.

Fig. 1



Proportional compasses are intended for the performance of what we may perhaps call "practical arithmetic." For instance; suppose a draughtsman were copying a drawing on a reduced scale, and that, in the original there was a range of twenty windows occupying a space of seven inches, and that he wished to represent the same range within a space of three inches. It would be tedious to make the corresponding calculation by arithmetic (that is, $\frac{3}{7}$ of seven inches, and $\frac{7}{3}$ of three inches), and then estimate the ascertained distance by a common rule divided into feet and inches: such a plan would be neither easy nor expeditious. But with the proportional compasses it could be effected with much ease. Again, suppose we wished to divide the circumference of a circle into seven equal parts, or, which amounts to the same thing to inscribe a polygon of seven sides within the circle. To effect this by common methods, we must see how many degrees are included in an arc of a circle equal to one seventh of the whole circumference: this is a fractional number between fifty-one and fifty-two: we then, by means of a protractor, or some similar graduated instrument, lay off that distance seven times in succession, by which we obtain seven equidistant points in the circumference of the circle. But with the proportional compasses, this complex process is much shortened. There are also other purposes which this instrument answers; but of these we shall speak presently: what we have already said will show that there is much practical utility in the instrument.

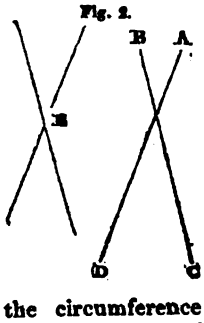
Proportional compasses differ from the common compasses in having the joint *between* or midway, instead of at one end of each leg, and also in having the joint moveable to any different distances from either end. On one of the two elliptical legs are marked certain scales, which appear in fig. 1. The

compasses consist of these two legs of brass, each having points of steel at both extremities; and these legs, when closed, lie upon each other so nicely as to appear but one. They easily open, and move upon a centre A, which is itself moveable in a hollow canal cut through the length of the legs. To this centre is fixed two sliding pieces, each one working in a dove-tailed groove in the sides of the slits in the legs: a fine line is drawn on the sliding piece, to serve as an index. A nut and screw are attached to A; so that when the compasses are rightly adjusted, the two legs can be fixed firmly together. On one half of one of the legs is a graduated scale called *lines:* these serve to divide two unequal lines into the same number of parts, (as in the case of the range of windows before alluded to.) This scale is numbered from one to ten or twelve. Suppose we wanted to represent a particular line in a drawing by one half the same length—that is where the length is divided by two. We close the compasses, and move the nut and sliding-piece, until the index-mark exactly coincides with fig. 2—(which is the position in our cut). It will now be found that the two lower ends, B C, are *twice* as far apart as the two upper ends, *b c*; so that if the lower ends be opened to the extent of the line in the original design, the upper ends will show the extent which the line is to occupy in the second design. If the new line is to be only one third of the original, the screw is to be fixed at 3: if one fourth, at 4, if one fifth, at 5, and so on.

The same scale is also useful in dividing a given line into a given number of parts. Let the opening of the lower points, B C, represent the given line. If the screw be now fixed at 2, the openings of the upper points, *b c*, will divide the line into two, or will be half the length of the given line: if at 3, it will divide the given line into three parts; if at 4, into four parts, and so on for the others. The cross-piece, *a a*, is intended to facilitate the *fixing* of the legs at any required opening. Before moving the joint, A, to a fresh division on the scale, the legs of the compasses must be re-laid one upon the other. There is a nick at the lower parts of the brass ellipses, which serves to show when the legs coincide.

It will now be seen that the principle on which this instrument acts in the case of lines, is that of similar triangles, where the bases are to each other as their sides. In figure E (fig. 2.) the joint, A, in fig. 1 is supposed to be at the centre, thereby making the triangles equal and similar; but in the next figure the joint, A, is higher up, and makes the triangles only similar, and the base, B A, only a certain part of the base, D C.

Fig. 2.



Another scale, usually marked on one of the legs, is called a scale of *circles*, or of polygons, the intention of which is to facilitate the division of a circle, or rather the circumference of a circle, into any number of equal parts. This scale is usually marked from six to about eighteen or twenty, and enables a draughtsman to inscribe within a moderate-sized circle a polygon of any number of sides from six to twenty. The principle on which the graduations on this scale are made, depends on the proportion between the *radius* of a circle, and the length of the side of a polygon inscribed within that circle. As the number of sides in the polygon increases, so does the length of the side decrease; the degree on the scale, therefore, at which we must fix the index attached to the central screw, depends upon the number of sides contained in the polygon which we desire to inscribe within a given circle. We have, therefore, to take the *radius* of the circle in one end of the compasses, when we have fixed the screw at the particular number which represents the number of sides in the required polygon; and, in the other end, we obtain the *length* of each side of the polygon. Having once obtained this length, its application is easy.

Another scale, frequently engraved on proportional compasses, is the scale of *areas* or *superficies*. This scale is constructed on the principle, that similar areas are to each other as the squares of their like sides. If, therefore, the index attached to the screw be placed against the figure 2 in the scale of areas, the distance between the upper, or least open points, will be the side of a plane whose area is 1; while the distance of the lower, or most open point, will be like the side of a plane whose area is 2. If the index be placed at 3, 4, 5, &c., on the scale of areas, the wider points will be at a distance representing the side of a plane whose area is 3, 4, 5, &c., while the upper points will be at a distance respecting the like side of a plane whose area is 1.

Sometimes also this sort of compasses is provided with a scale of *solids* or *cubic contents*, constructed on this principle,—that all solids are to each other as the cubes of their sides or diameter. If, therefore, the index be fixed at 2 on the scale of solids, the small opening of the compass will be equal to the side of a solid whose cubic content is 1, and the large opening of the compasses equal to the side of a solid whose contents equal 2; and so on for other proportions. The application of this scale need not be confined to figures of a cubical or parallelopipedon form; it may also apply to *spheres*. Suppose we have a spherical bullet which weighs one ounce, and we want to ascertain what must be the diameter of a bullet which would weigh ten ounces:—We make the smaller opening of the compasses equal to the diameter of the smaller bullet: we fix the index at the figure 10 on the scale of solids; and we now find that the larger opening of the compasses is equal to the diameter of a bullet which would weigh ten ounces, provided it were made of the same material as the smaller bullet; because the weight would obviously increase in the same proportion as the amount of solid matter increased, that matter remaining of the same kind.

There are some proportional compasses so graduated as to assist in the performance of many trigonometrical operations. They are therefore provided with scales of *lines, chords, sines, tangents,* and *secants*. But in all these instances, a mode of adjusting the instrument is employed, similar to that which we have already described. The index or screw is set to the number of degrees, &c., in the given quantity: the opening at one end is adjusted to the given radius, and the opening at the other end gives the required dimensions of the chord, sine, tangent, secant, &c., of the given angle.

Since the adoption of that useful little instrument called the *sector*, the proportional compasses have not been so much employed as formerly, in performing questions in trigonometry.

It is certainly a great disparagement to virtue, and learning itself, that those very things which only make men useful in the world, should incline them to leave it. This ought never to be allowed to good men, unless the bad had the same moderation, and were willing to follow them into the wilderness. But if one shall contend to get out of employment, while the other strives to get into it, the affairs of mankind are like to be in so ill a posture, that even the good men themselves will hardly be able to enjoy their very retreat in security.—*Life of Cowley.*

ANECDOTES OF A TAMED PANTHER.

By Mrs. Bowditch.

I am induced to send you some account of a panther which was in my possession for several months. He and another were found when very young in the forest, apparently deserted by their mother. They were taken to the king of Ashantee, in whose palace they lived several weeks, when my hero, being much larger than his companion, suffocated him in a fit of romping, and was then sent to Mr. Hutchison, the resident left by Mr. Bowditch at Coomassie. This gentleman, observing that the animal was very docile, took pains to tame him, and in a great measure succeeded. When he was about a year old, Mr Hutchison returned to Cape Coast, and had him led through the country by a chain, occasionally letting him loose when eating was going forward, when he would sit by his master's side, and receive his share with comparative gentleness. Once or twice he purloined a fowl, but easily gave it up to Mr. Hutchison, on being allowed a portion of something else. The day of his arrival he was placed in a small court leading to the private rooms of the governor, and after dinner was led by a thin cord into the room, where he received our salutations with some degree of roughness, but with perfect good-humour. On the least encouragement he laid his paws upon our shoulders, rubbed his head upon us, and his teeth and claws having been filed, there was no danger of tearing our clothes. He was kept, in the above court for a week or two, and evinced no ferocity, except when one of the servants tried to pull his food from him; he then caught the offender by the leg, and tore out a piece of flesh, but he never seemed to owe him any ill-will afterwards. He one morning broke his cord, and, the cry being given, the castle gates were shut, and a chace commenced. After leading his pursuers two or three times round the ramparts, and knocking over a few children by bouncing against them, he suffered himself to be caught, and led quietly back to his quarters, under one of the guns of the fortress.

By degrees the fear of him subsided, and orders having been given to the sentinels to prevent his escape through the gates, he was left at liberty to go where he pleased, and a boy was appointed to prevent him from intruding into the apartments of the officers. His keeper, however, generally passed his watch in sleeping; and Saï, as the panther was called, after the royal giver, roamed at large. On one occasion he found his servant sitting on the step of a door, upright, but fast asleep, when he lifted his paw, gave him a blow on the side of the head which laid flat, and then stood wagging his tail, as if enjoying the mischief he had committed. He became exceedingly attached to the governor, and followed him every where like a dog. His favourite station was at a window of the sitting room, which overlooked the whole town; there, standing on his hind legs, his fore-paws resting on the ledge of the window, and his chin laid between them, he appeared to amuse himself with what was passing beneath. The children also stood with him at the window; and one day, finding his presence an incumbrance, and that they could not get their chairs close, they used their united efforts to pull him down by the tail. He one morning missed the governor, who was settling a dispute in the hall, and who being surrounded by black people, was hidden from the view of his favourite. Saï wandered with a dejected look to various parts of the fortress in search of him; and, while absent on this errand the audience ceased, the governor returned to his private rooms, and seated himself at a table to write. Presently he heard a heavy step coming up the stairs, and, raising his eyes to the open door, he beheld Saï. At that moment he gave himself up for lost, for Saï immediately sprang from the door on to his neck. Instead, however, of devouring him, he laid his head close to the governor's, rubbed his cheek upon his shoulder, wagged his tail, and tried to evince his happiness. Occasionally, however, the panther caused a little alarm to the other inmates of the castle, and the poor woman who swept the floors, or, to speak technically, the *pra-pra* woman, was made ill by her fright. She was one day sweeping the boards of the great hall with a short broom, and in an attitude nearly approaching to all-fours, and Saï, who was hidden under one of the sofas, suddenly leaped upon her back, where he stood in triumph. She screamed so violently as to summon the other servants, but they, seeing the panther, as they thought in the act of swallowing her, one and all scampered off as quickly as possible; nor was she released till the governor, who heard the noise, came to her assistance. Strangers were naturally uncomfortable when they saw so powerful a beast at perfect liberty, and many were the ridiculous scenes which took place, they not liking to own their alarm, yet perfectly unable to retain their composure in his presence.

This interesting animal was well fed twice every day, but never given any thing with life in it. He stood about two feet high, and was of a dark yellow colour, thickly spotted with black rosettes, and from the good feeding and the care taken to clean him, his skin shone like silk. The expression of his countenance was very animated and good tempered, and he was particularly gentle to children; he would lie down on the mats by their side when they slept, and even the infant shared his caresses, and remained unhurt. During the period of his residence at Cape Coast, I was much occupied by making arrangements for my departure from Africa, but generally visited my future companion every day, and we in consequence became great friends before we sailed. He was conveyed on board the vessel in a large wooden cage, thickly barred in the front with iron. Even this confinement was not deemed a sufficient protection by the canoe men*, who were so alarmed at taking him from the shore to the vessel, that, in their confusion, they dropped cage and all into the sea. For a few minutes I gave up my poor panther as lost, but some sailors jumped into a boat belonging to the vessel, and dragged him out in safety. The beast himself seemed himself completely subdued by his ducking, and as no one dared to open his cage to dry it, he rolled himself up in one corner, nor roused himself till after an interval of some days, when he recognised my voice. When I first spoke, he raised his head, held it on one side, then on the other to listen; and when I came fully into his view, he jumped on his legs, and appeared frantic; he rolled himself over and over, he howled, he opened his enormous jaws and cried, and seemed as if he would have torn his cage to pieces. However, as his violence subsided, he contented himself with thrusting his paws and nose through the bars of the cage, to receive my caresses. I suspect that he had suffered from sea sickness, as he had apparently loathed all food; but, after this period, he eat every thing that was given to him.

The greatest treat that I could bestow upon my favourite was lavender water. Mr. Hutchison had told me that, on the way from Ashantee, he drew a

* The panther in these countries is a sacred, or Fetish animal; and not only a heavy fine is extorted from those who kill one, but the Fetish is supposed to revenge his death by cursing the offender.

scented handkerchief from his pocket, which was immediately seized on by the panther, who reduced it to atoms; nor could he venture to open a bottle of perfume when the animal was near, he was so eager to enjoy it. I indulged him twice a week by making a cup of stiff paper, pouring a little lavender water into it, and giving it to him through the bars of his cage: he would drag it to him with great eagerness, roll himself over it, nor rest till the smell had evaporated. By this I taught him to put out his paws without showing his nails, always refusing the lavender water till he had drawn them back again; and in a short time, he never, on any occasion, protruded his claws when offering me his paw.

We lay eight weeks in the river Gaboon, where he had plenty of excellent food, but was never suffered to leave his cage, on account of the deck being always filled with black strangers, to whom he had a very decided aversion, although he was perfectly reconciled to white people. His indignation, however, was constantly excited by the pigs, when they were suffered to run past his cage; and the sight of one of the monkeys put him in a complete fury. While at anchor in the before-mentioned river, an ourang-outang (*Simia satyrus*) was brought for sale, and lived three days on board; and I shall never forget the uncontrollable rage of the one, or the agony of the other, at this meeting. The ourang was about three feet high, and very powerful in proportion to his size; so that when he fled with extraordinary rapidity from the panther to the further end of the deck neither men nor things remained upright when they opposed his progress: there he took refuge in a sail, and although generally obedient to the voice of his master, force was necessary to make him quit the shelter of its folds. As to the panther, his back rose in an arch, his tail was elevated and perfectly stiff, his eyes flashed, and, as he howled, he showed his huge teeth; then, as if forgetting the bars before him, he tried to spring on the ourang to tear him to atoms. It was long before he recovered his tranquillity; day and night he appeared to be on the listen; and the approach of a large monkey we had on board, or the intrusion of a black man, brought a return of his agitation.

We at length sailed for England, with an ample supply of provisions; but, unhappily, we were boarded by pirates during the voyage, and nearly reduced to starvation. My panther must have perished had it not been for a collection of more than three hundred parrots with which we sailed from the river, and which died very fast while we were in the north-west trades. Saï's allowance was one per diem, but this was so scanty a pittance that he became ravenous, and had not patience to pick all the feathers off before he commenced his meal. The consequence was that he became very ill, and refused even this small quantity of food. Those around tried to persuade me that he suffered from the colder climate; but his dry nose and paws convinced me that he was feverish, and I had him taken out of his cage; when, instead of jumping about and enjoying his liberty, he lay down, and rested his head upon my feet. I then made him three pills, each containing two grains of calomel. The boy who had the charge of him, and who was much attached to him, held his jaws open, and I pushed the medicine down his throat. Early the next morning I went to visit my patient, and found his guard sleeping in the cage with him; and having administered a further dose to the invalid, I had the satisfaction of seeing him perfectly cured by the evening. On the arrival of the vessel in the London Docks, Saï was taken ashore, and presented to the Duchess of York, who placed him in Exeter Change, to be taken care of, till she herself went to Oatlands. He remained there for some weeks, and was suffered to roam about the greater part of the day without any restraint. On the morning previous to the Duchess's departure from town, she went to visit her new pet, played with him, and admired his healthy appearance and gentle deportment. In the evening, when Her Royal Highness's coachman went to take him away, he was dead, in consequence of an inflammation on his lungs. —*Magazine of Natural History.*

ON THE MANUFACTURE OF SHOT.

It would frequently excite surprise, were we to reflect for a moment on the vast extent of the manufactory, or the intricacy of the machinery, concerned in the making of a simple article. To manufacture a pin or a needle, for instance, requires a succession of processes, the vastness of which can only be appreciated by those who have attended closely to the subject: and the same may be said of a variety of familiar objects which we have in daily use. All this is a necessary consequence of the large demand for such articles. So long as human ingenuity is left unshackled, and persons possessing either capital, or a power of labour, are allowed to lay out their wealth to the greatest advantage, so long shall we see a successive train of improvement in the modes of producing manufactured articles.

We have been led to make these remarks by considering the very costly buildings which are, in our own day, appropriated to the manufacture of those apparently simple and trifling articles, *leaden shot*.

The purposes to which shot are applied are too well known to need any remark from us; but the mode of manufacture has gone through many different stages of improvement. One mode of making shot in former times was by rolling. Sheet-lead was cut into narrow strips, and these strips were cut, by a knife or some other instrument, into little cubes. Several hundreds of these cubes of lead were then placed on a flat stone, and another stone laid upon them: by working about the upper stone in every direction, the bits of lead gradually acquired a nearly spherical form, and if the stones were well polished, the shot would have a gloss imparted to them.

Another mode of making shot was by shaking together a number of the small cubical pieces of lead: by rubbing against one another, the angular projections were rubbed off, and a kind of sphericity produced, in the same manner as boys' stone-marbles are made. A rough mode of making shot by shaking, is described by a recent writer:—

> We recollect this method being turned to ingenious account by two country forgemen, who were in the habit of shooting great numbers of the wild ducks, which frequented the mill-dam. The men used, in the first place, to cut up the lead into angular bits of the desired size; these they put into an oblong can of sheet-iron, which they fastened to the head of the forge-hammer; the latter, by its motion, violently shook the contents of the can, up and down, until the bits within, striking against each other in every direction, soon became a very efficient, though not a very handsome, sort of duck-shot.

A more efficient mode of manufacturing shot is however by *casting*, since a more perfect sphericity can be obtained by such means. The mode of proceeding is as follows:—A pair of moulds consists of two side-pieces of brass, about ten inches long, and hinged together at one end, somewhat on the principle of a pair of nut crackers. Hemispherical cavities are made in those two faces of the side-pieces which join

one another when the mould is closed; so that, when closed, a complete spherical cavity is formed, to which a small opening conducts from without. When the mould is closed, a perforated plate is placed above the small openings, so that when melted lead is poured into the perforations of the plate, it flows through the small openings into the spherical cavities within the mould; and by a subsequent adjustment of the mould, the little pieces of lead attached to the shot are cut off, and the shot removed from the mould in a spherical form.

But this process is necessarily a slow one; and where large quantities of shot are required, it would obviously be desirable to have a quicker mode of proceeding. This has been accomplished in the method of manufacture now generally employed; a method which is remarkable not only for the details of which it consists, but for some circumstances connected with the invention and the inventor:—we allude to the method of *granulation*.

A plumber of the name of Watts, residing in Bristol in the year 1782, obtained a patent for the manufacture of shot by a mode which is said to have been suggested to his mind in a dream; this mode was to pour melted lead from a considerable height, so that, in falling, it should cool into separate globules or shot. He made an experiment from the tower of the church of St. Mary Redcliffe, at Bristol, which was satisfactory. He afterwards succeeded in disposing of his patent to the firm of Walker, Maltby, and Co., for 10,000*l*., and with this sum he projected the formation of a crescent on so grand a scale, at Clifton, that he spent the whole of the money in making excavations and foundation-walls, which afterwards obtained the expressive name of "Watts's Folly."

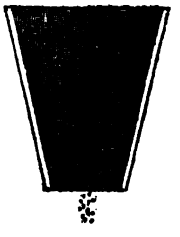
The mode of making shot invented by Watts has been acted on with some variation to our own day, and there are, on the southern banks of the Thames, several shot manufactories of a great height. The process of making the shot we may now describe. The substance employed is not pure lead, as every ton of it contains forty pounds of arsenic, the latter metal being employed to give hardness to the lead; but since there is an objection to *poisoned shot*, mercury is sometimes substituted for arsenic, and is said to answer tolerably well. These materials are cast into *pigs*, each weighing about one hundred weight and a half. Ten of these pigs are carried up to the top of the shot tower, or manufactory, into the melting-room. They are then put into a caldron, which is heated from beneath by a furnace. When the metal is melted, it is ladled out of the caldron, and poured into an iron vessel, somewhat resembling the common kitchen *colander*, the bottom being pierced with small holes, the same size as the shot which are to be made. The metal is not poured directly on the bottom of the vessel, but a little scoria or dross is first poured in, by which the liquid metal is somewhat cooled, before it reaches the holes. The metal passes through the holes in separate portions, hangs for a moment at the lower surface, and then drops; and this constantly going on from all the holes, an appearance like a shower of silver rain is produced.

After the drops have passed through the colander, they fall perpendicularly through about one hundred and thirty feet of space, into a receptacle filled with water, by which time they become solid, and soon afterwards cold.

The engraving represents a section of a patent shot tower: the melting-room at the top of this building is reached by a substantial stair-case of cast-iron.

When the shot are removed from the water, they are scattered over a large heated iron plate, which has a furnace beneath: they are stirred about until well dried, and then removed. They then present a dead white silvery appearance; and the next process which they undergo is to be placed in sifters, to remove the imperfect ones. The sifters or sieves are set in motion by machinery connected with a steam-engine. The shot are first thrown into one sieve, the meshes of which admit all beneath a certain size to pass through. Those remaining are then turned out into a second sieve, the meshes of which will receive all those which are properly made, and will only reject those of a large or irregular form: these last mentioned are of no use, and are taken back again to be re-melted: while those which have passed through the two sieves are retained.

But although they may all be within the proper dimensions, yet it may happen that some of them are irregular and misshapen; they have therefore to undergo another kind of separation; and the plan adopted is a very remarkable one. There are a number of shallow trays wider at one end than the other; these are suspended by strings at the wide end, and rest upon shot bins at the other. "Thus arranged, a boy, who manages two of these trays, throws upon each at the widest end, (that nearest to him,) a small measure-full of shot; he then takes hold of the trays, and giving them a gentle vibrating motion laterally, and at the same time raising the ends a little, to give them a slight inclination, the shot roll about, tending from side to side, those that are perfectly spherical making their way quickly off the board into the bin at their extremity; while those which are imperfect are detained by their comparatively sluggish movements, and being thus separated from the good, the trays are pushed forward about a foot, and their contents emptied into other bins, placed beyond those containing the good shot, as before mentioned. This operation is so effectual that it is difficult to pick an imperfect shot out of those that come to market. Four or five boys thus employed, with two trays to each, suffice for a manufactory of the kind above described, which makes about five tons per day. The smallest shot require the utmost care and gentlest management of the inclined plane; therefore the eldest or steadiest hands are selected to operate on them."



After this selection is made, the shot are polished. To effect this, a cast-iron barrel, holding perhaps half a ton weight, is nearly filled with shot, and a rotatory motion is communicated to it by a steam-engine: this causes all the shot to rub against and round one another, by which their surfaces acquire a blackish lustre, very different from the whitish appearance before observed. Finally the shot are placed in bags, ready for sale.

The diameters of shot vary from a quarter to about one thirtieth of an inch, by twelve regular gradations; the largest, or No. 1, being called *swan*-shot, and the smallest, or No. 12, *dust*-shot.

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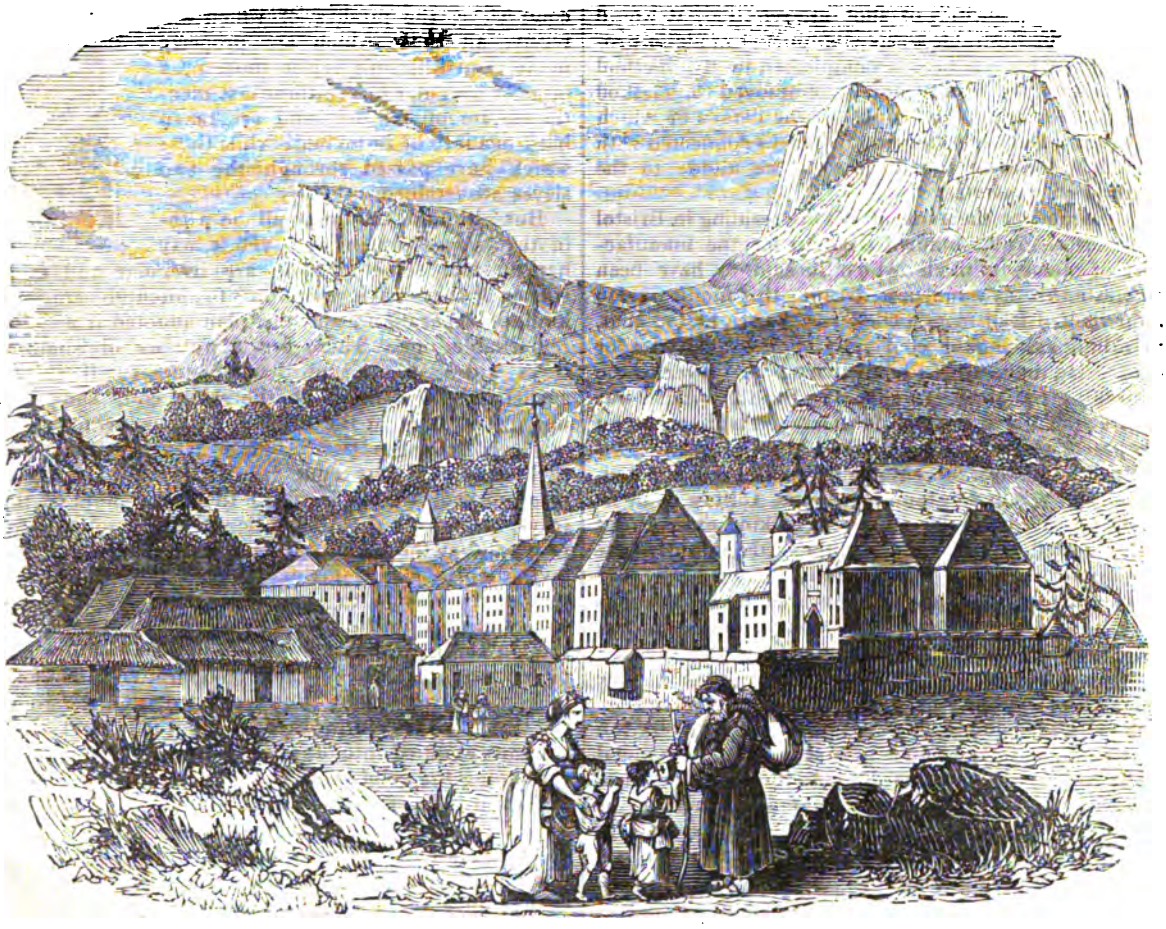
CARTHUSIAN MONKS.——SCENERY OF THE GRAND CHARTREUSE.



THE MONASTERY OF THE GRAND CHARTREUSE.

THE practice of retiring from the world, abjuring domestic ties, and devoting a man's whole life to a series of formal austerities, is of pagan origin, and is still followed by the heathens of Asia, more severely than by any monks professing Christianity. The most superficial reader of the New Testament must perceive, that neither our Lord nor his Apostles had any respect for the selfishness which shuns society, because of its demands on our sympathies and services, or that will-worship which makes religion to consist, not in simply doing the will of God, but in putting on a complex yoke of human ordinances.

Although of heathen origin, this peculiar mode of life easily glided into the Christian church, partly from its accordance with the unwillingness of human nature to weary itself out in struggles with the temptations and molestations of social life; partly because many of the early Christians, on being driven into deserts by persecution, acquired a taste for solitude, and thought that such retirement was sanctioned by the examples of Elijah and John the Baptist. According to Philo-Judæus, it began with certain persons of his own nation, settled in the see of St. Mark in Egypt. These Jews abandoned their property, and formed a society of recluses for engaging in prayers and psalmody. This seems to have been the first faint image of the monasteries which were afterwards so multiplied, both in the eastern and western churches, but which the eminently social character of pure Christianity, when it was restored to us at the Reformation, disowned and dispersed. The truth is, the Jewish proselytes of whom Philo speaks had acquired a taste for the ascetic life from the nations further east, and this they introduced, with other corruptions, into their new profession, on becoming Christians. St. Anthony was one of the earliest and most strenuous patrons of this kind of seclusion; he had many followers, and at length the *religious* life, as that of those who bound themselves by peculiar vows was called, was considered to flow in two great streams; the one consisting of bishops and priests, or the secular clergy, and the other of abbots, monks, and friars, or the regular clergy.

Absolute solitude being found too severe for many even of the most devout solitaries, some, on withdrawing from the common haunts of mankind, formed themselves into communities, renouncing the society of all persons not bound by the same vows and subject

to the same rules,—a kind of life opposed alike to the letter and the spirit of the Gospel, yet by which they vainly imagined they might earn the peculiar favour of Heaven. As this milder seclusion was much more endurable, so it became much more fashionable than the former; men liked better to be friars than hermits. St. Jerome, writing to Rusticus, when desirous to embrace a solitary life, says, "the first point to be determined is whether you should live alone, or along with others in a monastery. For myself I hold it better for a man to be with companions than to undertake the teaching of himself." While St. Anthony lived as a hermit in Upper Egypt, St. Hilary was following his example in Syria and in Palestine; and touched with the great reputation of the Egyptian saint, he paid him a visit, and returned, in his own opinion, much edified. In his ardour to extend this kind of devotion, he introduced into it certain changes, by which it became so popular in Palestine, that that country, from having nothing of the sort, soon was covered with innumerable monasteries. These he visited at certain times, followed by great numbers of monks, as was afterwards the practice with the generals and superiors of the religious orders. These two fanciful men had ample time for perfecting a system for the cultivation of personal holiness, which they seemed to think far superior to anything dreamed of by our Lord and his Apostles. St. Anthony lived to his ninetieth, and St. Hilary to his eightieth year.

Since their days the religious orders have multiplied, and been modified and altered, in proportion to the innumerable whims and fancies of men of ardent minds and heated imaginations, who have striven to outrun each other in the severity of the rules they have recommended, or, imputing the corruption of monasteries not to the want of true religion, but to some defect in their constitution, have endeavoured by new rules to attack evils as ancient and as deeply rooted as human nature itself.

Not the least remarkable of the monastic orders is that of the Carthusians, or Chartreux, whose extraordinary head-quarters in the mountains of Dauphiny we are about to describe. "It was instituted," says Gabriel d' Emillianne, "in the year 1080, according to some, and in 1086 according to other authors, on the occasion, it is said, of the following strange occurrence. A professor in the university of Paris, commendable alike for soundness of doctrine and moral conduct, died, and at his burial sat upright on the bier, and cried with a lamentable voice, 'I am accused by the just judgment of God.' This so frightened the persons present that the interment was put off for a day, when the dead again exclaimed, 'I am judged by the just judgment of God,' on which the interment was put off yet another day. At last, the third day being come, in the presence of a great multitude of people, the dead again cried with a terrible voice, 'By the just judgment of God I am condemned.' One Bruno being present, and taking advantage of this to address the assembly, he concluded that they could not possibly be saved unless they renounced the world and retired into deserts; and this he immediately did, along with six companions. They went to a frightful place, called the Chartreuse, among the mountains in the diocese of Grenoble, where the bishop first assisted and afterwards joined them. In that horrid desert, inhabited till then only by wild beasts, they built little cells apart from each other, and there they lived in silence and with great severity. They proposed to follow the rule of St. Benedict, only with additional severities." Hospinian relates their ancient observances, in nineteen articles, which prescribe, among other things, the wearing of hair cloth next the skin, entire abstinence from animal food, except fish, and that only when given them; to prepare their own victuals, and take their refections alone; to observe an almost continual silence; on no pretence to leave the monastery; to give themselves up to prayer, manual work, reading, and the transcription of books. Although they were never reformed, pretending that they never needed being so, like the other religious orders, St. Bernard complained in his day of the magnificence of their buildings; and in the seventeenth century they had accumulated immense wealth, and monasteries, on the model of the great Chartreuse, appeared in Italy, Germany, Spain, and all other countries subject to the Papacy. It has been observed that neither they, nor the pictures and relics of their pretended martyrs, pretend to work miracles, alleging that their saints in heaven are still such lovers of silence and retirement that, to avoid attracting notice, they avoid doing miracles.

A gentleman from the north of France visited the great Chartreuse in 1827, and on his return gave his friends the following striking description of the scene he had witnessed:—

"On leaving Grenoble you turn the point of St. Eynard, and ascend a long slope, interrupted by ravines, and leading up to Mount Sapey. On looking around you, the gray mountain-tops and irregular peaks of Dauphiny come gradually into view. But before plunging into the savage scene before you, give one look behind. Stretched out in all its loveliness at your feet, lies the vale—the rich and majestic vale of Graisivaudan, with its vine-bowers, its *forests* of hemp and maize, its bright-leaved mulberry trees, and that whole Italian landscape which, were it not that the frozen summits of the Alps meet the eye at every turn, might lead you to suppose that it was one of the plains of Lombardy. The Isère glides with countless windings through this verdant plain, and as it rolls along its ample bed of gravel, it laves, as it passes, the walls of many an ancient castle, and among others that of Bayard, and then slowly advances to Grenoble. On your right, another river, the Drac, seems to leap at one bound from the mountains, and hurrying straight towards the city, throws the Isère against it, where the two streams meet; thus suggesting an ancient prophecy of the country, that the serpent and the dragon are one day to destroy Grenoble.

"Having passed the lesser heights of Mount Sapey, at last, after a toilsome walk of seven miles, we reached the margin of a large and regular dale, lying between two mountain ranges which close it in, by uniting together. In the hollow stood the village of Chartreuse, overlooked by its little church and spire, reflecting the light from its covering of tin.

"As yet you neither can see the monastery, nor can guess at what point of the valley, which seems enclosed on every side, there can be an outlet for a road. You hear the roar of a mountain-torrent hard by, but as little can you guess how it makes its escape. The road now makes a sudden turn, and right before you stands the portal of St. Bruno. Two huge mountains, rising parallel to each other, leave a narrow interval between. Through the chasm thus formed rushes into hidden depths the torrent whose roar had struck your ear, and which is called the Guiers, or by some the Guiers of death, of which it is supposed to be an image. You cross this dismal gorge by a bridge thrown from rock to rock; and catch a glimpse in passing of the frightful abyss, into which the Guiers descends with a stunning roar, and rebounds in sheets of foam. Above, the mountains seem to lean over you, leaving only a narrow band

of blue sky visible. Impatient, however, of being kept from the scene you are approaching by so strange a vestibule, you push on, and forthwith two ranges of mountains open at a right angle, rising on either side, gray and bolt upright, clothed only with a few sombre pines, which look as if sustained miraculously on the invisible projections from which they spring.

"In the space before you you find the mountain-yew, the festooned foliage of the evergreen oak, the Scotch fir, and the larch, mingle and blend their various green hues, forming a leafy amphitheatre of a thousand galleries, whose rounded outlines cross and are lost in each other, as if several huge forests had been thrown confusedly together; while here and there you can see from under the foliage, far and high, the hoary heads of the everlasting mountains, crowned neither with herbage nor with snow, but dry and bony looking, yet enlivened by the delicate rosy tint with which the sun continues to adorn them, long after night has thrown her sombre shadows over the vale below. On the left, the Guiers, escaped from the chasm, rushes forwards with irregular impetuosity, carrying with it from the mountains stones and trees, which it knocks about or sweeps along with a dashing and crashing vehemence. Sometimes it advances from cascade to cascade, in successive leaps of thirty, forty, and fifty feet; at other times, meeting some apparently impassable barrier thrown across its bed, in the shape of an enormous rock, it rushes furiously against it, and flies up in foaming jets, but is forced at length to glide round the obstacle it cannot remove. For a certain distance your eye can follow the fantastic whirl of its waters, and even after you have lost sight of them, you can distinguish their hollow roar resounding amid the solitude, until it meets the mountain barrier, which, after forming a three-sided enclosure of about three leagues' extent, opens again to give it a passage. That passage forms the other portal to this wilderness.

"Yet, wild and distant as this scene appears, a well trodden and well kept pathway informs you, as if you were traversing a nobleman's park, that you have not yet left the inhabited world, and that you are doubtless approaching the monastery. The ground opens in front, and a broad meadow gradually spreads itself out into a beautiful slope, interrupted by horizontal intervals, and covered with a bright but slightly yellowish verdure, doubly contrasting with the dark hues of the woods you have been skirting, and the gray rocks that seem to follow you. And now, right in front, you behold the Grand Chartreuse. There it is, with its hundred slated roofs, surmounted by an equal number of iron crosses. Amid this vast circle of mountains, where every object may be expected to look little, the monastery rises from a plain of turf, like a city conjured up by magic in a desert. But on a nearer approach you listen in vain for the confused hum of a city, usually borne so far on the evening air; nor do you hear any of those cries of domestic animals which commonly announce the vicinity of the habitations of man, even in the most lonely rural districts. Nothing breaks in upon the stillness of the scene—a stillness like that which freezes the heart of the traveller when he views the beautiful but forsaken ruins of Palmyra, as they rise before him on the sands of Arabia."

If a spring be fouled on its way down the brae, it will soon brighten up again, for the clear water behind will wash away all impurities; but when the fountain-head has the foul stain in it, there is naething can purify that away,—naething else but mixing it with the ocean of eternity, and then rising again to the heavens purified to dew.—Hogg.

THE COUNTRY MAID AND THE PIMPERNEL FLOWER.

"I'll go and peep at the Pimpernel,
And see if she thinks the clouds look well,
For if the sun shine,
And 'tis like to be fine,
I shall go to the fair,
For my sweetheart is there,
So, Pimpernel, what bode the clouds and the sky?
If fair weather, no maiden so merry as I."

The Pimpernel flower had folded up
Her little gold star in her coral cup,
And unto the maid,
Thus her warning said,—
"Though the sun smile down,
Here's a gathering frown,
O'er the chequered blue of the clouded sky
So tarry at home for a storm is nigh."

The maid first looked sad, and then looked cross,
Gave her foot a fling, and her head a toss;—
"Say you so, indeed,
You mean little weed?
You're shut up for spite,
For the blue sky is bright;
To more credulous people your warnings tell,
I'll away to the fair,—good day, Pimpernel."

"Stay at home," quoth the flower.—"In sooth, not I,
I'll don my straw hat with a silken tie;
O'er my neck so fair,
I'll a 'kerchief wear,
White, chequered with pink,
And then, let me think,
I'll consider my gown, for I'd fain look well,"
So saying, she stepped o'er the Pimpernel.

Now the wise little flower, wrapped safe from harm,
Sat fearlessly waiting the coming storm;
Just peeping between
Her snug cloak of green,
Lay folded up tight,
Her red robe so bright,
Though broidered with purple and starred with gold,
No eye might its bravery then behold.

The fair maiden then donned her best array,
And forth to the festival hied away;
But scarce had she gone,
Ere the storm came on,
And, 'mid thunder and rain,
She cried oft and again,
"Oh! would I had minded yon boding flower,
And were safe at home from the pelting shower."

Now, maidens, the tale that I tell would say,
Don't don fine clothes on a doubtful day,
Nor ask advice when, like many more,
Your resolve was taken some time before.

L. A. Twamley.

It is not to be inquired how excellent anything is, but how proper. Those things which are helps to some, may be encumbrances to others. An unmeet good may be as inconvenient as an unaccustomed evil. If we could wish another man's honour, when we feel the weight of his cares we should be glad to be in our own coat.—Bishop Hall.

What is this body? fragile, frail,
As vegetation's tenderest leaf;—
Transient as April's fitful gale,
And as the flashing meteor brief.

What is this soul? eternal mind,
Unlimited as thought's vast range,
By grovelling matter unconfined;
The same, while states and empires change.

When long this miserable frame
Has vanished from life's busy scene,
This earth shall roll, that sun shall flame,
As though *this dust* had never been.

When suns have waned, and worlds sublime
Their final revolutions told,
This soul shall triumph over Time,
As though such orbs had never rolled.—Osborn.

ARTIFICIAL FLOWERS IN WAX.

IN the *Saturday Magazine*, Vol. XVI., p. 23, we have given our readers some account of the method of making wax figures: we now offer them a few directions for imitating the beautiful products of the flower garden, in the same material. The art of forming artificial flowers of wax is a delicate and interesting process, well suited to form an amusement for ladies in their leisure hours, and also to aid them in their botanical pursuits; for, by the exact imitation of rare and fragile flowers in wax, they have the representation of all the parts of the flower before them, in a much more perfect manner than can be supplied by painting, or even by the flower itself in a dried form. There is little difficulty connected with the operation; the materials are such as ladies will find it pleasant to handle, and the expense of the articles is trifling. It is not to be wondered at, therefore, that this elegant art is becoming fashionable among persons of taste, who have sufficient leisure to devote to such pursuits.

The following articles should be laid on the table, before the operation commences: *i.e.*, a pen-knife, a pair of scissors, a piece of wire about three inches long, pointed at one end, and having a round knob of sealing-wax at the other, three or four smooth and slender rods of wood, a few sheets of wax of different colours, some wire of different sizes, covered with green tissue-paper for stems, and some very thin tin, or brass, to cut up into patterns. Some green wax should also be at hand in a melted state.

A flower must be chosen for the first attempt, whose parts are very simple and easily imitated: the common primrose of the hedges, for instance, whose petals, or flower-leaves, are five in number, having in the centre five stamens, and being supported by a green calyx, or flower-cup. Take the blossom carefully to pieces, without injuring any of its parts: make the petals and calyx perfectly smooth by flattening them between the leaves of a book, or by placing them under a warm flat-iron, and then cut out patterns of the calyx, and of one of the petals the thin tin. These patterns must correspond precisely with the originals, for the least inaccuracy here would spoil the work. The tin patterns must next be laid upon the wax, in the direction of the length of the sheets, and the five petals and the calyx cut from them. Take one of the pieces of wire, being careful that it shall resemble in size the stalk of the primrose; dip it in green melted wax, and when cool, fix on the top of it, by the pressure of the thumb and finger, fine thread-like strips of dark yellow wax, to represent the stamens. These being firmly fixed, fasten on one of the petals in the same manner by pressure; then a second petal, a third, fourth, and fifth, putting them regularly round, and bending each petal outward, so that when completed the flower shall be flat, as it is in nature. The petals being all fixed, put the calyx in the palm of the hand for a short time, that it may become pliant; then form it to its natural shape round one of the little wooden rods, and thus prepare it to be slipped on at the lower end of the stalk of the flower. When it is properly placed, press it tightly against the stem, and the whole will firmly adhere together, and form the complete flower, except that a few touches of darker yellow will be required near the centre of the petals, and these may be given in oil-colours, or in water-colours mixed with ox-gall. Instead of the patterns in tin or brass, described above, some persons use shapes or moulds, formed exactly after the pattern of the petals, &c., so that by merely pressing them on the wax, they get the part cut out much more expeditiously and also more correctly than by using the knife or scissors.

This is the whole of the process as it respects the primrose, for the root-leaves are generally made of cambric, and are supplied by the artificial flower maker; being afterwards only dipped in warm wax to improve their appearance. Several other flowers are made with nearly the same facility, such as the snow-drop, the violet, the heartsease, the hyacinth, pink, &c.

Where the petals are hollow, as in the tulip, crocus, or ranunculus, the wax is warmed in the hand till it is quite pliable, and the central part of it is gently rolled with the sealing-wax end of the wire pin. This expands the wax, and forms it in the hollow of the hand to the required shape. Sometimes the petals of a flower are wrinkled and rough, as in the gum-cistus, the red poppy, &c., and in order to imitate this appearance the wax is well rolled, so as to make it thin and warm, and then crumpled up by the hand. If this is cleverly done, the wax petal on being opened will very nearly and beautifully resemble the peculiar appearance of the part it is intended to represent. Where the central part of a flower is formed of a little cup, as in the narcissus, it must be imitated by means of the head of the wire pin, as before, and the size of the wax required may be ascertained by cutting open and measuring one of these cups.

Quilled flowers, such as the dahlia and chrysanthemum, must have their petals rolled up with the fingers to the proper shape, after having been previously warmed and distended by the application of the head of the pin, as before. Flowers whose tints are delicately blended with each other can only be imitated by forming the petals of white wax, and then tinting them with powder colours, put on with a short-haired brush. In this way all kinds of striped or variegated flowers may be copied, and some of our most rare and beautiful plants may be accurately represented.

It is evident that many of our monopetalous flowers would be much more difficult to copy than such as we have described above, which have several petals. Our campanulas and convolvuluses, from their peculiar shape, seem to offer considerable difficulty, and in fact their representation in wax requires a greater share of patience and attention than most other flowers. The best way of making a convolvulus is to pour some plaster of Paris carefully into a natural flower, and thus get an exact mould on which to form the waxen copy. A piece of wax is then cut out, the size and shape of a convolvulus (which has been cut open on one side and flattened), and formed carefully round the mould, uniting the edges very carefully at a part of the blossom where the join will be hidden by one of the coloured rays which adorn the inside of that lovely flower. In this way bell-shaped flowers may be imitated to admiration. It is very important in copying single flowers to get the number of stamens and pistils correct, and to give them as much the appearance of nature as possible. An error in this respect is immediately detected by those who have given botany a share in their studies, and in their opinion destroys the effect of the most finely formed blossom. If the stamens are very short, they may be made of wax of the proper colour, but if they are long, they must be formed separately on fine wires, moulding the wax around the wire by means of the finger and thumb. The ends may then be dipped in gum-water and immediately after in powder, of the colour required to represent the anthers and stigma. A close observation of the natural flower, whatever it may be, will soon teach the best means of imitation in these respects, and may likewise suggest other ideas, in addition to these which we have thrown out for the benefit of beginners in this pleasing art.

ON MIGRATION.

I.

"YEA, the stork in the heaven knoweth her appointed times; and the turtle and the crane, and the swallow, observe the time of their coming."—JER. viii. 7.

"For, lo, the winter is past, the rain is over and gone, the time of the singing of birds is come, and the voice of the turtle is heard in our land."—SOLOMON'S SONG, ii. 11, 12.

THE instinctive knowledge and sagacity observable in the lower animals, in their methods of procuring food; of constructing habitations for themselves and their progeny; of defending themselves when attacked; and of providing against the evils arising out of those seasonal changes to which all parts of the earth are liable, cannot but be familiar to every common observer: but to those who are living in the retirement of the country, and have leisure and inclination for daily attention to the objects by which they are surrounded, the habits of quadrupeds, fishes, birds, and insects, afford continual subject for curious inquiry and pleasing remark.

Perhaps of all these habits, none is more remarkable than the periodical migration of birds and other animals from those quarters where there is no longer a supply of food for them, or the approaching season would prove fatal to their existence, and their simultaneous movement towards a more hospitable land. In the case of certain quadrupeds, the desire to migrate appears to seize them suddenly and at irregular intervals. Thus the lemmings of the frozen regions of Lapland and Norway only perform their extraordinary journeys two or three times in the course of twenty years, when an unusual increase in their numbers causes a scarcity of food in their mountain-homes, or when the season threatens to be a rigorous one*. The appearance of these animals at the time of their migration, and the ravages they commit in the country through which they pass, are thus stated in MISS ROBERTS'S *Sketches of Wild Animals*.

When emerging in Lulean Lapland from a deep pine forest, rendered pleasant by the tender leaves of the birch, we discovered on a sudden what appeared to us like a dark cloud, slowly descending the flank of a lofty mountain. It was early in the morning, and when the mists were dispersed, and the beams of the risen sun had flung their wonted splendour over the whole of that alpine district, we discovered that this unusual cloud was no other than an incredible multitude of lemmings that were marching towards the plain. Having stationed ourselves on the nearest eminence, we could readily discern the order and regularity of their course. They proceeded in a straight line, and as they passed, the ground appeared as if recently turned up with a plough; they devoured every green thing, and nothing could impede their progress: they crossed ravines, torrents, marshes, and broad lakes, and if a rock or other obstacle opposed their advance, they only swerved from the line, while they were going round it, and immediately returned to their former course. In crossing one of the lakes, some of the neighbouring farmers got into a boat, hoping to prevent them from landing on a field of corn. But no; though their phalanx was separated by the oars, they would not recede; they kept swimming directly on, and soon fell into regular order again. The farmers pushed their boat towards the shore and endeavoured to prevent the enemy from landing. Vain was their opposition. The lemmings soon made good their footing, and on they went, devouring the green blade, and marking their progress with devastation. Some of the men attacked them, and then, driven to desperation, they rose up, uttered a kind of barking sound, flew at the legs of the assailants, and clung so fiercely to the end of their sticks, as to suffer themselves to be swung about before they would quit their hold. Very few of the vast multitude return to their native mountains; some perish in the water, and swarms of enemies, hawks, owls, and weasels, attend their progress. There can scarcely be a more beautiful spectacle than the march of these pigmy armies, and the surprising perseverance with which they pursue their course. The females are often loaded with their young; some carrying them on their backs, and others in their mouths.

Other quadrupeds are occasionally found to migrate in vast companies, and to considerable distances, but without much regularity of proceeding, or of period. The herds of bisons, so often described by travellers in North America, as covering the wide extended savannahs of that country for miles, feeding in the open plains, morning and evening, and retiring during the sultry time to shady rivulets and streams of clear water, where they may be seen gliding through thickets of tall canes,—are also migrant, especially in the more southerly latitudes, where the character of the seasons renders the plains almost barren and destitute of other herbage than aloes, or such esculent plants. The peculiar form of these animals, their dark, flowing, shaggy manes; the low bellowing sound that they utter, and the vast numbers of them generally seen together, must indeed form a most imposing spectacle. The migration of the bison takes place at various periods, and seems to be owing to accidental causes.

It is well known that fishes migrate. To this cause we are indebted for the abundant supply of salmon in our markets. Arriving from the northern seas, shoals of these fishes force their way up the rivers in autumn, sometimes for hundreds of miles, springing up cataracts, and surmounting other obstacles which come in their way, in a manner truly astonishing, till they reach a place proper for the reception of their spawn. When this is deposited in a hole, prepared by the fish in the sandy or gravelly bed of a river, the parents hasten back again to the warmer waters of the sea, leaving their offspring to be hatched in the ensuing spring. Great quantities of these fishes are taken in England and Scotland, on their first arrival in our rivers: more indeed than will supply the London and other markets; so that the overplus is salted, pickled, or dried, and sent to the continent. The cod-fish spawns in the polar seas; but as soon as the more southern seas are open, it repairs to the banks for subsistence. Thus about the month of May, great numbers of cod arrive at Newfoundland, Nova Scotia, and New England, and find in the shallows of those extensive sand-banks the food peculiarly grateful to them, in the multitude of worms which they are able to obtain there.

Most of the herring species are migratory, and generally in immense shoals. They multiply beyond all description in the northern seas, which prove a safe retreat for them from their numerous enemies. Shoals of them come out from these seas; and the immense swarm of living creatures is separated into distinct columns, five or six miles long, and three or four broad. In this order they arrive at the Shetland Isles, in June, from whence they proceed down to the Orkneys, where they divide and surround the islands of Great Britain and Ireland, uniting again in September in the British Channel, from whence they steer south-west, and are next seen in America. In the bays, rivers, and creeks of New England they deposit their spawn, continuing there till the latter end of April. They arrive at Newfoundland in May, and are no more seen in America till the ensuing spring.

Some species of mackerel are migratory, making long voyages at certain seasons of the year. The same is the case with the pilchard, anchovy, &c.

Migratory locusts form a dreadful scourge to the countries subject to their ravages. When the winter has been too mild to destroy their eggs, they increase to an amazing extent, and the desert of

* See the description given of this animal in the *Saturday Magazine*, Vol. VI., p. 68.

Arabia, from whence they are generally observed to come, can no longer afford food for them, so that they proceed in flights which darken the air to the various regions of Syria, Egypt, and Persia, where they totally consume the vegetation of the territory on which they alight, while their noise in feeding can be heard to a considerable distance, and resembles that of a foraging army. In those countries, however, the evil is happily soon repaired; for so vigorous is the sap of the trees, that new foliage appears in a few days, and even the herbaceous plants soon recover their usual appearance. A visit from these insects is much more destructive when it occurs in any part of Europe; the crops of that season being completely destroyed. But this calamity is not so frequent, nor are the swarms so formidable as in former times. Locusts have been occasionally seen in Britain, and much apprehension has been excited on that account; but the coldness and humidity of our climate, form our best defence against such invaders, and when any of them arrive in our land, they are sure to perish, without leaving a young generation behind them. The southern parts of Africa were infested with them to a dreadful extent in 1797, when an area of two thousand square miles is said to have been literally covered with them, and the waters of a wide river were scarcely visible, owing to the multitudes of carcases that floated on its surface.

Butterflies have been observed to migrate in immense flights. Mr Lindley witnessed this in Brazil, in 1803 when great numbers of these insects, of white and yellow colours, proceeded in a direction from north-west to south-east for many days successively, and if they met with no obstacle to impede their course, they must have perished in the ocean. More recently, a flight of the species called *painted lady* has been observed near the Lake of Neufchatel in Switzerland. They were all flying close together in the same direction from south to north, and were so little intimidated when any one approached them, that they turned not to the right or left. Their flight continued for two hours, and the column was about ten or fifteen feet broad.

Remarkable instances have been recorded of the migration of *aphides*, and of their enemies, the lady birds. Mr. White speaks of a shower of aphides which alighted at Selborne on the first of August, 1785, covering every leaf, and the dress of persons walking in the street. He supposed these swarms to have been driven from the hop plantations of Kent and Sussex, by an easterly wind which prevailed at the time. Kirby mentions the arrival of vast numbers of lady-birds at Brighton, and at all the watering places on the Kent and Sussex coast, in 1807, when they were considered by the superstitious as the forerunners of some dreadful evil; these persons being ignorant that the little visitors were merely emigrants from the neighbouring hop-grounds, where they had been rendering an essential service in the destruction of the aphides.

The migration of bees and ants is a matter of common observation, and presents many curious and interesting features which will repay the attention of those who steadily watch the proceedings of the several swarms. The habitations of various species of ants may be observed to swarm, with winged insects, in warm summer weather, busily occupied in their preparations for leaving home. At length the male ants rise, as by a general impulse, into the air, and the females accompany them. The swarm rises and falls with a slow movement to the height of about ten feet, the males flying obliquely with a rapid zigzag motion, and the females, though they follow the general movement of the column, appearing suspended in the air like balloons, apparently without any individual motion. Migrations of another kind are performed by these insects; for when a heedless step has injured their little dwelling, and caused them to apprehend danger in the situation they have chosen, they immediately become uneasy and soon set about selecting a new home. They have no sooner made their choice, than the march begins in a very orderly manner, and the high road, which leads in a straight line to the new establishment, is filled with a line of ants, some bearing eggs and some carrying their companions, and the whole colony is actuated with such a spirit of persevering industry, that their new dwelling, or rather city, is speedily completed. A slight injury done to their walls they quickly repair, but they soon take the alarm if this is often repeated, and those who for experiment have frequently destroyed a part of the building have been disappointed, on coming to look at the ant hill, to find that the whole party had decamped.

The migration of birds, however, affords the chief subject for our notice, and this we shall describe in a future article.

Forgive thy foes; nor that alone;
Their evil deeds with good repay;
Fill those with joy who leave thee none,
And kiss the hand upraised to slay.
So does the fragrant sandal bow,
In meek forgiveness to its doom;
And o'er the axe, at every blow,
Sheds in abundance rich perfume.—KNOWLES

A wise man hath his foibles, as well as a fool. But the difference between them is, that the foibles of the one are known to himself, and concealed from the world; the foibles of the other are known to the world, and concealed from himself. The wise man sees those frailties in himself which others cannot; but the fool is blind to those blemishes in his character, which are conspicuous to everybody else. Whence it appears, that self-knowledge is that which makes the main difference between a wise man and a fool, in the moral sense of that word.—MASON *on Self-Knowledge.*

Oh! only He, whose word at first
Bade Woman into being burst,
The master effort of His mind,
The last and loveliest of her kind;
He only knows the thousand ties
That weave a mother's sympathies;
The mystery of that mighty bond,
Soft as 'tis strong, and firm as fond,
That blends joys, sorrows, hopes, and fears,
To link her with the child she bears.
In vain the feebler sense of man,
That feeling's breadth and depth would scan;
It spreads beyond, it soars above
The instincts of his ruder love.—HANKINSON.

There are two channels of information, by which the Creator has enabled mankind to arrive at a knowledge of truth, namely, sight and hearing. And each has its appropriate source, from which a knowledge of the things pertaining unto God are derived into the mind. The visible world, or natural kingdom of God, is the province in which the eyes expatiate, in search of materials for contemplation; the invisible world, or spiritual kingdom of God in Jesus Christ, that which *cometh by hearing*. In other words, the visible world leads the way to the religion of nature; the invisible, through hearing, to the religion of grace. And that this latter method of arriving at divine truth is the surest, appears from this, that even the most stupendous miracles, although they overpowered the reason and established the fact of Divine interposition, did not enlighten the minds of those who were only spectators to the understanding of Gospel doctrine; whereas the plain and simple exposition of it, from the mouth of an apostle, made thousands *wise unto salvation*.—BISHOP BLOMFIELD.

EFFECTS OF LITERATURE ON THE MORAL CHARACTER.

It is rational to conclude, that our proper employment lies in those inquiries, and in that sort of knowledge, which is most suited to our natural capacities, and carries in it our greatest interest, that is, the condition of our eternal estate. Hence I think I may conclude, that morality is the proper science and business of mankind in general, (who are both concerned and fitted to search out their *summum bonum*,) as several arts, conversant about several parts of natute, are the lot and private talent of particular men, for the common use of human life, and their own particular subsistence in the world.—LOCKE.

I ASSUME an important point,—namely, that moral excellence, or virtue, is the highest excellence of human nature. Outward beauty is an excellence: we are formed to admire a graceful and elegant conformation. Bodily strength is an excellence: we cannot be insensible to the value of physical power. A vigorous and active mind is an excellence; for it raises its possessor in the scale of intelligent agents. And a lively imagination is an excellence; for it is a noble occupation to hold converse with the ideal world. But no one of these is the highest excellence of man; for man is a moral being, and the highest excellence of a moral being is goodness.

Now if this be so—and who will dare to deny it? the value of everything with which we are concerned should be estimated by the effects which it is calculated to exercise upon the moral character: and it is a point of immense importance to ascertain how the moral condition of man is affected by the cultivation of literature.

As regards books written expressly to inflame the passions and corrupt the heart, or to diffuse falsehood and scepticism, we have nothing to say. No one doubts about the tendency of such writings. They are the open foes of what is most dear to us, and none who place any value upon purity or virtue, will lightly risk themselves in their company.

With many, however, general reading is most literally a mere form of dissipation. It is resorted to purely in idleness, and avowedly for the sake of amusement. Books are perused indiscriminately; or, what is worse, nothing is read but the periodical literature, or works of a trifling or ephemeral nature. The practice is pursued with no view to self-improvement, but merely to collect materials for gossip, or to beguile the vacant hours of solitude.

The mind is distracted rather than disciplined by this idle and discursive method of reading; it becomes fastidious, and acquires an unnatural appetite for food which excites for a time, without adding permanent strength and vigour to thought and action. The effects of all this are as injurious to the heart as to the intellect. From the practice of reading good and bad alike, without selection or discrimination, the taste is in danger of being perverted, and the principles of being impaired; the reader gains no substantial knowledge, no practical views nor great principles; he acquires no good habits; he becomes impatient in the search after truth, and his moral improvement would have been more advanced by devotion to some common art or every-day occupation.

But when literary pursuits are carried on honestly, soberly, and in a right spirit, they elevate and purify the moral character. It is indeed complained that knowledge is apt to render men vain, self-sufficient, and arrogant, and makes them look with contempt upon those who are less instructed. But it is certainly not the natural tendency of real knowledge to produce such a state of mind; for the more a man knows the more plainly he sees the limits of human knowledge, and the more sensibly he feels the weakness of the human understanding. It is not the man of real learning in literature or science, who prates about the extent of human knowledge, and deifies the intellect; but the man who has a smattering of learning, or who is acquainted only with those branches of knowledge which are most uncertain and imperfect. For the man of learning compares his own acquirements with those of others; he comes to know how much after all he has to learn; time and space, mind and matter, are spread out before him, and the vast and majestic scene makes him feel his insignificance. "He rises above himself, and looks from an eminence upon nature and society and life. Thought expands, as by a natural elasticity, when the pressure of selfishness is removed. The moral and intellectual principles of the soul, generously cultivated, fertilize the intellect. Duty, faithfully performed, opens the mind to truth, both being of one family; alike immutable, universal, and everlasting."

Again, the cultivation of literature has a direct tendency to foster and confirm a spirit of patience and and self-discipline. Rash and presumptuous minds, indeed, are eager in forming opinions, and are prone to deduce conclusions from inadequate premises; but the student who deserves the name, gets to understand too well the difficulty of gaining truth, to venture to embrace opinions hastily, or without due examination. He becomes desirous of examining things for himself; he suspects the soundness of received opinions, and is anxious to refer every fact to its ultimate source of intelligence. And this implies much self-denial and patience: it requires abstraction from unprofitable society, and the renunciation of idle and vicious habits: it demands energy, industry, and perseverance; and in the end compels us to make many sacrifices and overcome many importunate temptations. Learning, thus earnestly and zealously cultivated, imparts force and vigour to the moral character.

Literary pursuits are naturally humanizing. They tend to diminish and remove the coarseness and violence which are characteristic of ignorance, and to substitute in their stead politeness and civility. They communicate to the manners a degree of elegance and animation which are much more graceful than the heartless formality which is learned in intercourse with what is called the world. They open the mind to perceive the real condition and relations of man, and convey to it a deep conviction of the propriety of discharging the social duties. The conscientious man of letters will indeed keep no terms with vice: he will have little respect for fashionable follies; but in his studies he has gained a deeper and more comprehensive love of his species: his heart has been trained to the exercise of habitual kindness and philanthropy.

But how are we to reap these best and highest fruits of learning? The question may be answered in a few words. We can expect benefit of this sort from literature only when we enter upon literary pursuits conscientiously, and with a sincere desire of deriving from them moral advantage. If we have recourse to them for materials for display, they will only foster an unworthy weakness; if we resort to them as an amusement, they will operate only as an amusement, and will be more likely to relax the moral character than to strengthen it; if we apply to them for confirmation of our prejudices, or excuse for our vices, they will only contribute to our depravity. If, on the contrary, we study severely and steadily, from a sincere love of knowledge and truth, under a sense of our responsibility, and in dependence on higher aid, though we may be exposed to peculiar temptations, we shall pass through them safely, and as we advance

in wisdom, shall make a corresponding proficiency in virtue.

In conclusion, let me recommend young minds to choose some particular line of study. It is ill for the public, and for the individual, when powers of any value are wasted without an object. There are some who excuse themselves for their ignorance on the subjects on which they ought to be best informed, by pretending to have cultivated general knowledge. Do not be imposed upon by that phrase, but be assured that all superior minds regard the accomplishments which it is usually employed to indicate, as utterly worthless and contemptible. This general knowledge is the foppery of literature. It may qualify a man to talk; it may give him reputation with the superficial and illiterate; but it renders him ridiculous in the eyes of discerning persons, and is so far from rendering him wiser or better, that it tends to deteriorate both his intellectual and moral character.

[*Abridged from a Lecture by the* REV. JOHN GOULTER DOWLING, *read before the Gloucester Literary and Scientific Association.*]

THERE is no magic in the works of nature; there are causes and means for every effect, though we do not always discover those: and though God operates by a word, that word acts as philosophically and reasonably as the hand of man, in chemistry, according to the rules of that science, in mechanism, under the laws of mechanics.—MACCULLOCH.

FIELD FLOWERS.

FLOWERS of the field, how meet ye seem
Man's frailty to portray,
Blooming so fair in morning's beam,
Passing at eve away;
Teach this, and, oh! though brief your reign,
Sweet flowers, ye shall not live in vain.

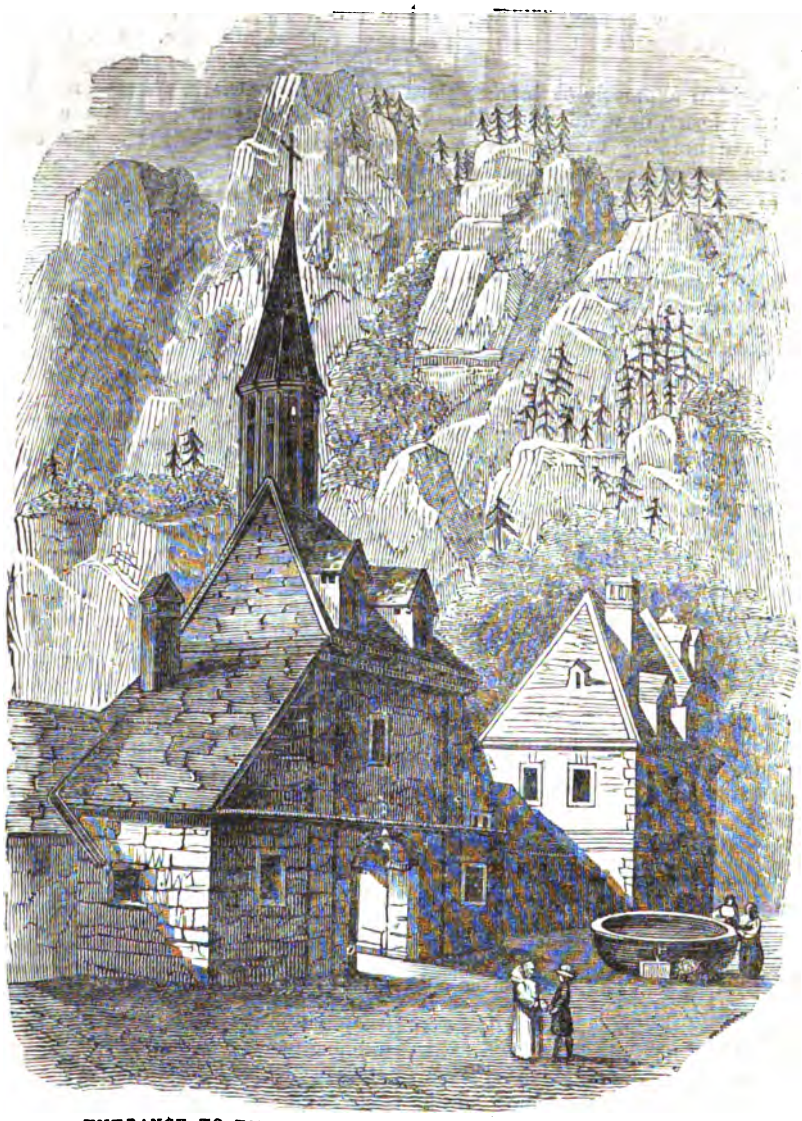
Go, form a monitory wreath
For youth's unthinking brow:
Go, and to busy manhood breathe
What most he fears to know;
Go, strew the path where age doth tread,
And tell him of the silent dead.

But whilst to thoughtless ones and gay,
Ye breathe these truths severe,
To those who droop in pale decay,
Have ye no words of cheer?
Oh, yes! ye weave a double spell,
And death and life betoken well.

Go, then, where wrapt in fear and gloom,
Fond hearts and true are sighing,
And deck with emblematic bloom
The pillow of the dying;
And softly speak, nor speak in vain,
Of your long sleep and broken chain;

And say that He, who from the dust
Recalls the slumbering flower,
Will surely visit those who trust
His mercy and his power;
Will mark where sleeps their peaceful clay,
And roll, ere long, the stone away.

Moral of Flowers.



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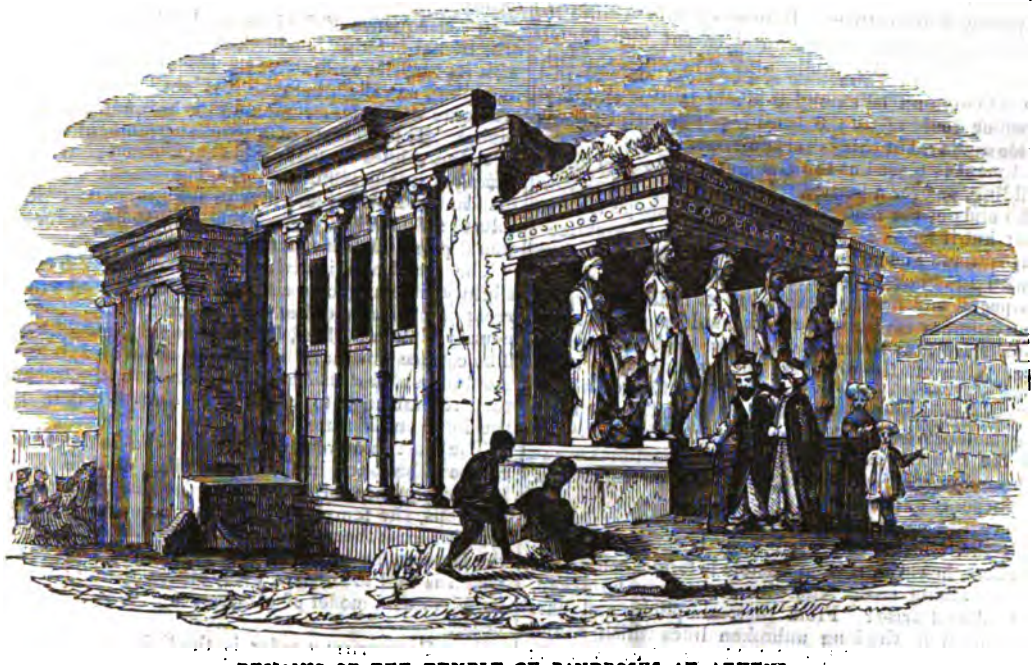


REMAINS OF THE TEMPLE OF PANDROSUS AT ATHENS.

DORIC ARCHITECTURE.

THE Doric order may be said to consist of three parts, viz., the *stylobate*, the *column*, and the *entablature*.

The word *stylobate* is derived from the Greek, and signifies *a basement for columns*. The stylobate differs from a pedestal in this: the former is a continued unbroken substructure, or basement to columns, while the latter term is confined to insulated supports.

In the Doric order the stylobate is in height from two thirds to a whole diameter of the column. It is usually constructed in three equal courses, which recede gradually, the one above from the one below; and on the floor of the uppermost surface, or step, the columns rest. The object of the stylobate is not so much to afford access to the portico, as to impart an air of firmness to the structure, which it does in an eminent degree.

The columns are short, varying from four to six diameters in height; they are without bases, because of the narrowness of the intercolumniations, and also on account of their tapering form. They spread out at the bottom, and so afford a sufficient base, not only in reality, but also to satisfy the eye: whereas, did the columns rest on bases, not only would great inconvenience be experieneed, but a heavy awkward effect would be produced, which is avoided altogether by terminating the columns on the floor of the stylobate. The columns taper in a graceful curve; and this tapering is rendered more apparent by the flutings which lessen the massive effect of the columns; and produce a pleasing variety of light and shade. The flutings, which are generally twenty in number, are wide and shallow, separated by sharp edges only, thus producing an effect of breadth: they follow the general curve of the shaft, and detail on the floor of the stylobate.

The capital of the columns consists of an *echinus* (or *egg*-shaped projection), and a deep square *abacus* (or tile), above it. The echinus swells out, so as to exceed the diameter of the foot of the column; which, however, it appears to equal, on account of the distance at which it is always seen.

We come now to speak of the entablature, or horizontal mass, resting upon the abaci of the columns. The reader will remember that the entablature is composed of architrave, frieze, and cornice.

The architrave is the first member of the entablature, and rests immediately on the abaci. It presents one plair broad face, and is proportioned to the weight it has to bear. Its height is usually equal to the narrowest diameter or *neck* of the column. The width of its *soffit*, or under side, is midway between the two extreme diameters of the column; so that it overhangs the upper part of the shaft: it does not, however, project over the abacus, which, by presenting a more extended surface, seems better calculated to support the pressure of the whole entablature.

The frieze is usually of the same dimensions as the architrave, from which it is separated by a projecting band, or fillet, called *tænia*. The frieze is ornamented by slightly projecting tablets, in which are cut two *glyphs*, or grooves, and two half-glyphs, one on each of its outer edges, thus making three glyphs, or grooves, and giving the ornament its appropriate name of *triglyph*, an ornament which is peculiar to the Doric order. The width of each triglyph is rather more than half the lower diameter of the column. One triglyph is situated over each column, and one over each intercolumn.

The spaces between the triglyphs are called *metopes* (a Greek word signifying *spaces between*), which were, it is said, originally intended to represent the ends of the beams which rested on the architrave, and formed the inner roof, or ceiling. The metopes are squares, and were sometimes occupied with sculptures in bas-relief.

The triglyph is said to have been originally formed to prevent the rain from adhering to the ends of the beams: the water thus running down the grooves, and dropping from the tænia, is said to have suggested to an early Grecian

architect another ornament peculiar to the Doric order; viz., the *guttæ*, or drops; which are attached to a fillet, and placed below each triglyph, under the moulding of the architrave. However fanciful the reputed origin of the guttæ may appear, the use of this beautiful and simple ornament is evident: it seems to break the monotony of the line to which it is attached; and by extending some ornament from the frieze to the architrave, it produces the effect of making these two important members of the entablature harmonize with each other. The eye, accustomed to look upon a Doric building with the pleasure and satisfaction which it is so well calculated to produce, would soon be sensible of a material deficiency, if this apparently humble ornament were removed.

The metopes are regulated by the height of the frieze; and this again regulates the intercolumns, or spaces *between* the columns; for as there must be a triglyph over every column, there cannot be more than one triglyph over each intercolumn, because each metope is a square; unless, indeed, the intercolumn be extended to one metope and one triglyph, which would make the space between each column half as wide again: but this is seldom done.

The pediment is placed at the front or at the end of a Doric building, or over a portico. Its object is obviously to enclose the ends of the roof, whose triangular shape it usually takes; but it forms a very important part in architectural composition. The pediment is covered with a projecting cornice, with a bold ovalo [echinus] moulding. The Doric cornice is peculiar in having attached to its soffit a series of shallow rectangular tablets or *mutules*, studded with guttæ. These tablets are to the cornice what the triglyphs are to the frieze. One of these tablets corresponds with each metope, as well as with each triglyph; the effect of which is to produce a beautiful gradation of parts. The deep triangular space enclosed by the cornice and ovalo moulding is called the *tympanum*. This space was sometimes occupied with sculptures representing subjects in connexion with the purposes of the edifice.

"Such are the materials," observes a modern architect, "of which the Greeks composed their beautiful temples. Of their effect, however, it is impossible to form a competent idea without seeing one. And whence, it may be asked, does their interest arise? From their simplicity and harmony: simplicity in the long unbroken lines which bound their forms, and the breadth and boldness of every part; such as the lines of the entablature and stylobate, the breadth of the corona, of the architrave, of the abaci, of the capitals, and of their ovalos also; in the defined form of the columns, and the breadth of the members of the stylobate;—harmony in the evident fitness of every part to all the rest. The entablature, though massive, is fully upborne by the columns, whose spreading abaci receive it, and transmit the weight downwards by the shafts, which rest on a horizontal and spreading basement; the magnitude of every part, being determined by the capacity of the sustaining power. Besides graceful and elegant outline, and simple and harmonious forms, these structures possess a bewitching variety of light and shade, arising from the judicious contour and arrangement of mouldings, every one of which is rendered effective; by the fluting of the columns and the columnar capital, whose broad, square abacus, projects a deep shadow on the bold ovalo, which mingles it with reflections, and produces on itself almost every variety. The play of light and shade, again, about the insulated columns is strongly relieved and corrected by the deep shadows on the walls behind them; and in the fronts, where the inner columns appear, the effect is enchanting. For all the highest effects which architecture is capable of producing, a Greek peripteral* temple of the Doric order, is perhaps unrivalled †."

We now proceed to inform the reader of the chief peculiarities of the IONIC order. Certain features of one order are of course common to all; and having just described the Doric somewhat fully, we must now confine ourselves, for what follows, to the more important points of *variation* in the orders, whereby the reader will have no difficulty in assigning to its proper order, any building in the pure Grecian style, which may invite his attention, before he proceeds to an examination of its more important details.

The general peculiarity of the Ionic order is delicacy and elegance; as that of the Doric is massiveness and bold effect; accordingly, in the Ionic, all the arrangements are skilfully ordered, so as to appeal, as it were, to the poetry of the mind of the spectator. The columns are tall and slender; their height being usually nine diameters. Each column rests upon a base composed of two *tori*, or convex mouldings, with a concave moulding, called the *scotia*, between them. The flutings in the shaft are twenty-four in number, with spaces or fillets left between them, each fillet being equal in breadth to about one fourth of the flute. The flutes are thus multiplied and set more apart from each other: they are much narrower than in the Doric, and deeper in proportion to their breadth: they terminate in half circles or ellipses; the shaft itself does not taper so suddenly as in the Doric. The upper torus of the base is either fluted horizontally, so as to harmonize with the shaft, or it is enriched with an *interlaced* network-ornament, called a *guilochos*.

In consequence of the increased height of the column, an ornamental necking is added, composed of the honey-suckle with its tendrils embracing the shaft; above this is an *ovalo*-moulding, so called, because it is cut into *eggs;* and there are some other lesser mouldings before we arrive at the capital. This consists of a parallelogramic block, on whose faces the volutes are cut: these consist of spiral mouldings, arranged into graceful curves. The abacus is much smaller than in the Doric order; it is so set, as not to overhang the volutes: if it did so, a heaviness would be produced, which would prove offensive to the eye.

The architrave is divided into three nearly equal faces, slightly projecting over each other, and crowned with a *cyma** *recta* moulding, either carved or plain. The frieze is usually a plain surface, but may be enriched with sculpture. The cornice is equally simple: it is divided into parts by mouldings and *dentil* bands, which latter are so called from their resemblance to a row of *teeth*, and belong peculiarly the Ionic entablature.

The most numerous examples of the Ionic order were of course to be found in the Ionian cities of Asia Minor; but in consequence of the many destructive inroads of the Persians, the temples were laid in ruins, and so few of their remains exist there. One of the most beautiful specimens of the Grecian Ionic, is that of the Minerva Polias at Athens, which is said to surpass every other existing relic, and may be taken as a model of elegance and completeness in this order.

The CORINTHIAN order is the lightest of all three, and admits of the greatest display of ornament. Its column, like the Ionic, consists of base, shaft, and capital: its average height may be stated at ten diameters; the base is composed of three tori and scotiæ, divided by fillets, and standing on a plinth. The shaft is fluted; the flutings are separated by fillets rather more than a quarter of each fluting in width; the flutings are semi-elliptical, but cut so deep as almost to become semicircular; at the head the flutings terminate in leaves to which the fillets are stalks. The core of the capital is cylindrical, and of the same diameter as the shaft; it is banded by one row of water-leaves, and by another of acanthus, or olive leaves (which are peculiar to the order), and covered by a scooped abacus, between which and the leaves *cauliculi*, or little stems of a plant, spring up, curling gracefully in the spiral forms of volutes.

The entablature of this order admits of more ornament than that of the Ionic. In the cornice is a band of modillions which are peculiar to this order. The frieze is plain; the architecture is divided into three faces by *astragals*, or small mouldings, and is surmounted by a *cymatium*, which is the same as the *cyma* spoken of before.

Such then is a brief account of the three orders of architecture, as invented by the ancient Greeks. In the details given above, we have stated the peculiarities of each order with some degree of precision; it must not, however, be supposed that the Grecian architects followed implicitly the arrangements we have stated. The love of novelty and variety is among all people and in all ages so prominent a feature of the human mind, that it is everywhere displayed in the existing remains of Grecian architecture. Still the broad features of each order are attended to, and whatever variations were adopted, harmony is preserved; although in respect of proportion and ornamental detail, no two examples may probably agree. It was necessary to offer the reader descriptions from approved types, without informing

* A temple was called *peripteral*, when the columns went *all round* the building.

† *Encyclopædia Britannica*; article, Architecture.

* The word *cyma* is Greek (*κυμα*) and means a *wave*. It is used in reference to two sorts of mouldings, distinguished by the manner of their curvature into the *cyma recta*, and the *cyma reversa*.

him of the variations; these he will be able to take note of for himself, when he is able at once to recognise an order by a view of its principal elements.

There is, however, one variation of the Greeks which ought not to be passed over in silence, since it has been adopted by modern architects, although perhaps with questionable taste. We mean the adoption of male and female figures in the place of columns, supporting a massive Doric entablature.

The male figures are represented in a crouching posture, with their hands tied before them. They are called *Persians*, and are said to have been introduced by Pausanias, about the year 478 B.C., to celebrate the victory of Platæa, in which the Persian invaders were completely overthrown. The spoils of this victory were devoted to the erection of a commemorative monument, where these supporting figures were first introduced, representing, it is said, some of the principal Persian generals, who had been killed or taken prisoners.

The female figures are represented with various sorts of ornamental attire; they are called *Carians* or *Caryatides*, and are meant to celebrate the defeat of that people by the Athenians.

The effect of these figures is in general unpleasant; they are represented as crouching beneath the ponderous weight above them. The human form is thus degraded, and the spectator is reminded of a degree of physical labour which interferes with the enjoyment of an architectural structure. The Greeks had a powerful motive for the adoption of these figures, which perhaps affords them an excuse for doing so. The figures of the Persians reminded them of their oppression by this people, who were at length defeated; the Carians also had been long at war with the Athenians, and at length shared a similar fate: and to represent this conquered people in the lowest possible state of degradation, they placed upon the sculptured representations of them the heaviest entablature, viz. the Doric; but there is a display of savage feeling in this device which we would willingly avoid.

It is however necessary to remark that the above account of the origin of the Caryatid figures is due to Vitruvius, who, with his accustomed zeal in referring everything to its original source, often oversteps the bounds of sober inquiry, to deal in hazardous conjecture. The use of these Caryatid figures is said by other writers to be more ancient than the invasion of Xerxes, and to have been borrowed by the Greeks from Egypt. Others suppose them to represent the virgins engaged in the worship of Diana, and bearing on their heads the sacred vessels of the temple.

With respect to the mechanical disposition of the materials adopted by the ancient Greeks in their structures, we knew but little, except what Vitruvius informed us of, until the labours of modern travellers threw some light upon the subject.

The first material employed by the Greeks in their sacred buildings was *timber*; then *brick*, the art of making which they are said to have derived from the Egyptians; *stone* was next employed; and last of all, the most beautiful, as well as permanent substance which can enter into the construction of a noble edifice, viz., *marble*.

We learn from Messrs. Stuart and Revett, that the wall enclosing the cells of the Parthenon was formed of horizontal rows of marble blocks, each of the same thickness as the wall itself; and that the junctions in each alternate horizontal course were vertically over each other. This seems to have been the method adopted by the Greeks, when great durability was desired.

The pavement is composed of square stones of equal size; and the joints are so neatly fitted, as scarcely to be seen. The columns consist of single blocks placed one upon another, the height of each block being about two thirds of a diameter of the column. The architrave consists of three blocks in thickness, and one course in height: it rests on the capitals of the columns by its own weight alone; each block extends from the axis of one column to the axis of the next. The frieze is formed of one course in height; the metopes are thin stone tablets attached to the face of the frieze: but the blocks on which the triglyphs are cut, are partly inserted in the frieze. The cornice is formed of blocks, each, in extent of front, equal to one triglyph and one metope.

In order to accomplish that close union of the marble blocks which has so often been the object of admiration to the moderns, the faces, which were to be brought into contact vertically, had each its middle part hollowed out into a square or rectangular form to a small depth, so as to leave a raised margin a few inches broad all round the exterior. The surface of this margin was highly polished; so that the corresponding margins of any two blocks came into such close contact, that the external line of junction is often imperceptible. The object of hollowing out the middle part of each block, was to avoid the labour of polishing the whole of the surface.

It seems to have been usual to add the ornamental parts after the building was erected, and not during the progress of erection. These ornaments were cut out of the solid stone, the surface thereof being first smoothed. Even the flutings of the columns seem, from the appearance of some unfinished buildings, to have been executed after the erection of the columns.

4. ROMAN ARCHITECTURE.

> These roads that yet the Roman hand assert,
> Beyond the weak repair of modern toil;
> These fractured arches, that the chiding stream
> No more delighted hear; these rich remains
> Of marbles now unknown, where shines imbibed
> Each parent ray; these massy columns, hewed
> From Afric's farthest shore; one granite all,
> These obelisks high-towering to the sky,
> Mysterious marked with dark Egyptian lore;
> These endless wonders that this sacred way
> Illumine still, and consecrate to fame;
> These fountains, vases, urns, and statues, charged
> With the fine stores of art-compleating Greece.
>
> THOMSON'S *Poem on Liberty*.

THE architectural labours of the Greeks were chiefly confined to the erection and embellishment of their temples, the entrances of their cities, and their places of public exercise; their private dwellings claimed but little of their regard, and what in another country would be considered quite necessary for the comfort of the people, was in Greece neglected. The Romans greatly excelled the Greeks in their attention to objects of national utility; they not only gratified their piety or vanity by erecting splendid temples to their gods, but they constructed fine roads and bridges, well adapted to the internal communications of their vast empire; as also immense sewers for draining their cities; and magnificent aqueducts for furnishing them with abundant supplies of pure water.

Long before any communication was established with Greece, the Italians seem to have cultivated architecture. The people of Etruria, or Tuscany, are said to have invented a particular order, called THE TUSCAN; and it is believed that the Romans employed Tuscan architects to execute their great works, before they had made acquaintance with the splendid results of Grecian art.

It is, however, supposed by some that the Tuscan is only a modification of the very ancient Doric order. It is further said, in support of this opinion, that a colony of Arcadians, under Evander, established themselves in Italy at a very early period, and introduced a style of building as practised in Greece. This may appear the more probable if we compare the two orders. The Doric, divested of a few mouldings and of its triglyphs, its columns being reduced a diameter or two in height, would furnish the Tuscan order. It is the most solid and simple of all the orders: it admits of no ornaments whatever. The column is about five modules in height: the base is composed of torus, fillet, and square plinth; and the capital consists of an abacus, torus, and fillet. The entablature is composed of a plain architrave, frieze, and cornice. It is proper to state, that no regular example of this order occurs among antique remains. Vitruvius refers to it under the appellation of *The Rustic*, from its original simplicity and rudeness of style: the term *Tuscan* was bestowed by the modern Italians, from its supposed Tuscan origin; but the proportions and parts of this order as stated above are given by Vitruvius. From the massive character of this order, and the absence of ornament, it has been quaintly compared by Worton to a sturdy labourer, in homely apparel. It is, however, from its simplicity well adapted to markets, sheds, shambles, and constructions of a like character.

It does not appear that architecture was known in Rome before the time of the Tarquins; but from that period we meet with various indications of a growing acquaintance with the art. During the reign of the elder Tarquin, the ancient temple of Jupiter in the capitol was commenced, by

* *Vis more.*

Etruscan workmen: according to Cicero, it had two rows of columns in the interior, by which it was divided into three parts, and its front was crowned with a pediment. We find from the same authority, that it was twice destroyed, and as often rebuilt on the same foundation.

The ancient temple of Vesta, supposed to have been built by Numa Pompilius, was of a circular form, and surrounded by columns whose capitals resembled those of the Corinthian order. The double temple of the Sun and Moon, which is supposed by some to have been dedicated to Venus and Rome, must also have displayed great magnificence of character; nor can we doubt that many structures were erected in Italy and Rome during the times of the monarchy and commonwealth, which have since mingled with the dust of the soil upon which they stood.

No sooner had a regular intercourse been established between Italy and Greece, than the Italian artists began to copy the works of their more refined neighbours: but either through want of taste to appreciate the simple beauties of Grecian architecture, or from an unwillingness to appear as mere copyists, they undertook to vary the style and increase the ornaments of the different orders: hence, no doubt, arose the fifth order, called *The Roman*, or COMPOSITE, in which the volutes of the Ionic are united with the foliage of the Corinthian. This order is very likely to have been produced by some artist, who, in despair of originating anything better, combined the ornamental parts of the two orders already existing. It is doubtful whether the Composite Order existed under that name in the time of Vitruvius, as he does not give any particular description of it, though it is supposed to be alluded to in the first chapter of his fourth book.

There is one particular in which Italy has an apparent right to assert her superiority;—for to that country is attributed the invention of the *arch* and *dome*. No vestiges appear of such an arrangement of materials in the records of the modes of building of any nation, prior to its intercourse with Rome; and, though it is just possible that the invention may have taken place in some part of Asia, where, owing to the scarcity of large masses of stone, such a contrivance would be very desirable and necessary, yet the absence of authenticated examples of such a form of building, makes it probable that it was entirely unknown. There are many appearances in nature, which might suggest the idea of a curved entrance to a building: the openings of caverns, and the perforations in rocks, frequently assume this form; and we accordingly find that the ancients did adopt a similar form. Mr. Hamilton describes an artificial perforation in the shape of an arch which was made in a solid wall, and served as the doorway to an ancient fort at Ephesus; but neither the perforated wall nor the covered passage, can be classed under the name of the "arch." Such methods have been practised in all countries, and are nearly as old as the art of building itself. But of that kind of arch which consists of a number of wedge-like stones, disposed in a vertical plane, and supporting themselves in the air by their mutual pressure, we meet with no sign among any of the remains of the early architecture of Greece; there was no bridge even over the river Cephissus, which crosses the road to Athens, until one was erected by the Romans when they were in possession of the country. The *tholos* of Homer and other Greek authors, though usually translated *dome*, signified a building of a circular form, without regard to the roof; and the roof of the temple of the Winds*, which approaches more nearly to the character of a dome than any other, being composed of twenty-four separate blocks, which abut on a key-stone at the vertex, are not considered as exhibiting any feeling of the principle of the arch.

Whoever may have been the first inventor of the arch, the Romans have the credit of bringing it into general use, and of applying it to the most important purposes. At Tusculum, near Rome, is a conduit, which is considered to be one of the earliest specimens of arches. It is a subterranean channel proceeding from a reservoir under a mountain; it has vertical sides, and is covered with stones in the form of frusta of wedges, abutting against each other at their oblique sides, so that the principle of the arch is distinctly exhibited. We may mention next to these, the arches found in part of the ancient walls of Rome, built by Tullius, and the *Cloaca maxima*, supposed to have been the work of Tarquin the elder, which is formed of immense blocks of stone united without cement, and exhibiting a semicircular vault as perfect as any subsequently erected.

* For a further account of the celebrated "Temple of the Winds, see *Saturday Magazine*, Vol. XIV., p. 54.

The time of Julius Cæsar affords the next example, of which we have any knowledge, of the employment of the arch. The theatre of Marcellus, erected by him, is adorned on the exterior with rows of arches; and as this theatre is supposed to have been an imitation of one erected by Pompey, and his theatre again to have been imitated from that at Mitylene of the time of Alexander, it has been thence inferred that there must have been arches in the last-mentioned buildings, like those in the theatre of Marcellus. But as both Pompey's theatre and that of Mitylene have entirely disappeared, there is no possibility of ascertaining this to be the fact; and thus Italy may still maintain her pretensions to the invention of the arch and dome.

We must not, however, forget the claims of the Chinese to the invention of the arch. It seems to have been known to them from time immemorial, and certainly long before its introduction into Europe. The arch covers the gateways in their great wall; they employed it in the construction of monuments to their illustrious dead, and in the formation of their bridges. Kircher tells us of stone bridges three or four miles long, and of an arch, of the incredible span of six hundred feet.

Arches must have been used in Rome, long before the time of Vitruvius, who flourished in the age of Augustus, from the unequivocal manner in which he speaks of them; he gives directions for their construction in that workmanlike manner, which must evidently have been the result of long and intimate acquaintance with his profession.

Architecture seems to have attained a pitch of great excellence in the time of Augustus. The then known world was almost entirely subject to Rome: a general peace prevailed, and the politer and kinder arts were cultivated under the auspices of the Emperor, and fostered by men, whose capacious designs, and great mechanical skill, still continue to claim our wonder and attention. Architecture shared in the general prosperity of the peaceful arts. Augustus caused the erection of many superb edifices, and so far changed the aspect of "imperial Rome," as to gain the high encomium of having "found it built of brick, and left it of marble."

The justice of this encomium may, however, be questioned. The exaggerated accounts of travellers, who talk of marble temples, palaces, and baths, have contributed to raise a false idea of the richness of the materials used in buildings at Rome. The truth is, that the majority of the edifices is composed of brick, and that there are only a few columns and their entablatures, that are of marble, or granite, and two or three buildings of Travertine stone. At Rome, and in the provinces, the surface of the buildings was covered with stucco, and this often received much decoration. The edifices were erected for the purposes of real utility and convenience, exhibiting almost every variety of structure which could be required for man in a state of civilization, and forming in this respect a marked difference between the Romans themselves, and their predecessors, in civilization. In Egypt we find few indications of other edifices, than such as were erected for temples or tombs; nor can we discover many traces in Greece of buildings constructed for a different purpose: but at Rome, owing perhaps in part to the discovery of the arch, the variety of form was endless, and the rudest and cheapest materials were speedily applied to some valuable purpose. The arch entered into the construction of every building, and superseded the use of long beams of timber; indeed, the opinion has been entertained that the Romans were very little skilled in the application of timber to their dwellings. But, while this opinion is favoured by the appearance of portions of the ancient houses discovered at Rome, and by the use of mosaic pavement instead of flooring, and stucco in the place of wainscoting; it becomes at the same time very questionable, when we remember the dreadful conflagration which took place in the reign of Nero, which could hardly have prevailed to such an extent, if timber had not been employed in the ordinary houses; and also the remarkable bridge, built by Trajan over the Danube, the piers of which are said to have been 150 feet high, and 170 feet apart, which bridge there is much reason to believe consisted of a wooden platform.

Although the Romans did not use marble in the luxurious manner described by poets and travellers, yet costly stones and marbles of every variety were in requisition, and columns were made of Egyptian and other granite, and of porphyry. Even in Greece, and in the colonies, the Roman edifices might have been distinguished by the application of foreign marbles in their construction, had there been no other sign of their origin, arising from difference of style and execu-

tion. But such signs were not wanting to distinguish the Roman architecture from that of Greece: the mingling of columns and arches in the same building, at first arising from necessity, and afterwards copied and repeated through want of taste, destroyed all simplicity and harmony of arrangement; and the practice of the science went on deteriorating at Rome, until the most extraordinary combinations were the result. Specimens of such exist in the palace of Diocletian at Spalatro, in the temple of Pallas, and in the ruins of the forum of Nerva in Rome.

"It were an endless task," says Hope, "to recite the constructions so well adapted for every useful purpose, for every object of magnificence, reared within, or in the immediate vicinity of Rome;—aqueducts of prodigious length, which, from the adjacent mountains, carried in every direction streams of the clearest water across its vast plain into its inmost bosom; sewers of indestructible solidity, which again conveyed far away every species of impurity; roads as indestructible, as ours are perishable, which from the capital diverged on every side to the utmost confines of the peninsula, and on these roads, bridges, massy and durable, which joined the opposite banks of the widest rivers; forums, or public porticoes, where its population might meet and converse, sheltered from heat and rain, increased in the time of Augustus to the number of forty-five, and which, under Trajan, received the addition of that forum in which stood his triumphal column, surrounded by a forest of other pillars of granite of a single block of immense height and diameter; baths erected by Augustus, by Nero, by Titus, by Caracalla, and by Diocletian, each containing all that could serve for cleanliness, for health, for exercise, and for amusement; each seeming a palace in splendour, and a city in size, and still by their ruins astonishing the world: basilicas for the administration of justice, and the despatch of business, vast and superb beyond description; and even shambles so sumptuous, that on a medal of Nero, appears a building, inscribed 'Macellum Augusti*,' which, from the richness of its columns, might be mistaken for an amphitheatre; the Circus Maximus for races, whose incredible size and magnificence prevented not several others, little inferior to it, from successively arising; the amphitheatre of Vespasian, computed to contain 109,000 spectators, of which, after one-half had been pulled down in 1084 by the Norman, Guiscard, lest it should be used as a citadel against him, and the other half had furnished the popes with materials, with which to build the palaces, Farnese, of St. Mark, and of the Cancellaria, the remains have struck with amazement the beholders of every succeeding age; the mausolea of Augustus, of Adrian, and others; the gorgeous palaces of the emperors; the temples without number; the triumphal arches, the architraves, piers, cornices, acroteria of the richest granite, porphyries, and marble, such as to bewilder the imagination that pictures to itself the buildings to which they belonged, rising spontaneously, like plants wherever in a fruitful soil we thrust the spade. Not less remarkable were the buildings erected in the provinces far and near:—amphitheatres at Verona, in Cisalpine Gaul, at Arles, and Nismes, and Vienne beyond the Alps, and at Pola, on the Dalmatian shore, almost as stupendous as the Coliseum itself; Asia Minor, adorned by Augustus with several temples of the largest dimensions; Athens itself, endowed by Adrian with a temple of Jupiter Olympus, behind which the loftiest monument of her independence, that consecrated by Pericles to Minerva, hid its diminished head; Antioch doubled from what it was under its kings; and Alexandria made in the column, called of Pompey, to forget the lesser prodigality of its Ptolemies; a temple of the sun at Baalbec, of which the mere base contained three stones, measuring from back to front, exclusive of the bold and rich cornice, ten feet, five inches; from top to bottom thirteen feet, and collectively from end to end, one hundred and ninety-nine feet; buildings equally astonishing raised in the Decapolis of Palestine, and in the cities on the coast of Africa, and others not less splendid, erected in different parts of Spain; the bridge on the Danube, and the Pont-du-Gard in Gaul; the prodigious moles of different sea-ports; the gates of Arles, Nismes, Narbonne, Autun, and other cities innumerable; and even in a place scarce noticed in history, at Orange, one of the largest theatres known, and traces of an amphitheatre, and stadium, and naumachia, so stupendous, that we can only account for its construction in that situation, by supposing that the spot was one, where the whole population of surrounding provinces met periodically for purposes of festivity."

* The shambles of Augustus.

The subject of Roman architecture then being so vast, it cannot be expected that we should in this brief history enter into descriptive details of particular structures: nor indeed is it necessary, because the reader will find many accounts of the architectural remains of ancient Rome in the previous volumes of the *Saturday Magazine*. All we can afford to do is to institute a brief comparison between Greek and Roman architecture, before we move onward with the history of the art.

In the most magnificent results of Grecian architecture we observe a simplicity and unity, which are chiefly due to the system of unbroken horizontal lines in the upper and lower parts of their buildings: as these lines serve almost at a glance to mark the length and breadth of the building; so do the nearly vertical lines of its columns equally serve to show its height. The sculptured ornaments are sunk within the general face of the building, so as not to interfere with the outline: while a monotonous character is warded off from it by the elegant curves of the various mouldings. The skilful adjustment too, of the various parts, so as to produce a harmonious but ever varying effect of light and shade, according to the position of the spectator, must not be forgotten among the many excellencies of Grecian architecture.

But the Romans, setting aside their acknowledged love of ornament and display, were in the possession of the arch,—that wonderful structure, which, on account of the facility with which it might be everywhere employed, required the greater taste and caution in its adoption: this alone was sufficient to impart to Roman architecture an entirely new character which was absent in the Grecian. The Romans adopted the Grecian structures for their model, and often excelled them in extent and magnificence; but nearly always at the sacrifice of taste. "Skill in mechanics," says Hope, "is a faculty wholly distinct from taste in the fine arts: where the latter exists, or lies dormant, or retrogrades, the other may still advance, still make great and rapid strides. Thence the greater exigencies of the Romans in respect of architecture, the vaster buildings they had to raise and to cover, soon made them seek all the superior means, and develop all the superior powers of the arch." "Pillars and walls placed so far asunder that no blocks of stone, no beams of wood can connect them, may by the arch be embraced and combined. An area so spacious that no flat ceiling could cover it, may by the vault be closed in with equal solidity and durability; by means of the vault the expense of cutting, of carrying, of raising masses of immense weight, only to produce small intervening spaces, may be avoided. A less quantity of materials may be spread out over, and render habitable a much greater space. To form a just estimate of its capabilities, we need but glance at the Pantheon of pagan, and Saint Peter's of papal Rome."

In the construction of their temples, the Romans adopted the Grecian form with certain modifications in the proportions of the columns and entablature: they preferred the Corinthian order as admitting of greater ornament; but in the external forms of their buildings in general, we notice a great departure from their Grecian model by the construction of brick domes, lofty pediments, and the superposition of the orders. The construction of the dome implies great mechanical skill, which we readily ackowledge at the sight of such solid materials suspended as it were in the air, and held in equilibrium by the mutual pressure and support of a large number of single blocks of brick or stone, whereby in later times a degree of grandeur has been imparted to buildings, which the earliest specimens of architecture could not claim. In Roman buildings, too, the inclination of the sides of the pediment is in general greater than in Grecian examples; the consequence of which is a higher raised roof, which interferes with the simple system of horizontal and vertical lines, and indicates a less degree of skill in resisting the lateral pressure of the rafters, which is very great in low roofs. But climate has much to do with the forms of roofs; for while the low Grecian pediment, raised in the middle, was just sufficient to throw off the gentle showers of a mild climate, where violent storms seldom or never occurred, the high Roman pediment was necessary in a ruder climate, where storms and torrents of rain were not unfrequent.

With respect to the superposition of the orders, we are not aware of any Grecian example, because the Greeks did not build in stories. The Romans, however, in buildings of great height, found it difficult, if not impossible, to make columns of one order extend from bottom to top: they con-

sidered the building as being divided into several stories, and marked each story by a particular order, the strongest being placed lowermost, and the axes of the columns continued in the same vertical line. Thus, the Tuscan is stronger than the Doric, the Doric than the Ionic, and the Ionic than the Corinthian: therefore, if the Doric be the lowest order, the Ionic succeeds, and the Corinthian follows next. But, since the different stories of a building should be in a decreasing progression, the superior columns should be diminished in order to lessen the weight, and also to accommodate the heights of the windows.

Even in their best days, the Romans do not seem to have appreciated the simple beauties of architecture. They did not possess the genius to invent, and they scarcely commanded the taste to appreciate the inventions of the more refined Greeks. They neglected the essential conditions of beauty in their desire for ornament; and, consequently, the principle upon which all ornament ought to be founded, escaped them. They delighted rather in ostentation and luxury, vastness and magnificence, than in simple beauty. They approved of Grecian forms, and strove to outdo that nation, as well in arms as in architecture: they succeeded in the one, and failed in the other. They collected the ornamental parts of the Grecian orders, and often united and applied them with much inconsistency. The Doric they seldom employed on account of its severe inflexibility: they preserved its name, however, in an order which they substituted for it, in which the characteristic features were omitted, and which they made to differ from the Ionic and Corinthian only by its greater massiveness. The Ionic volute became in their hands less varied and graceful, and they deprived the Corinthian of those peculiarities so eminently characteristic of its origin, which, whether true or fabled, always occur to the mind at the sight of this graceful capital;—the acanthus rising round it with its tendrils curling beneath the superposed tile. These tendrils were transformed by the Romans into large volutes, or the volutes of the Ionic itself were substituted: and thus arose the Composite, which, so far from being an invention, was only an awkward combination of parts never intended to be combined. Sometimes they associated the Doric triglyph with the Ionic dentil: the Doric column with the Ionic entablature: "but among all these re-combinations of elements," says Hope, "we nowhere remark the discovery of any mode of decoration essentially new; and to this day the ornamental forms of ancient architecture are limited to the number exhibited by the Greeks in the days of their freedom."

The golden age of architecture in Rome was during the reigns of Augustus, Vespasian, Trajan, and Hadrian; but the honour of adorning the empire was not due to sovereigns alone,—it was shared with them by the governors of provinces, and even by private individuals. Herodes Atticus, a citizen of Athens, is one of the examples given of the wealthy subjects of the empire, who encouraged architecture by their munificence and zeal. But after a time, when individual property became insecure, and the mad profusion of bad emperors had exhausted or misapplied the treasures of the state, there being then no longer a demand for the talents of artists, the principles of art became neglected, and the cultivation of a pure taste gradually declined: so that, when a prince arose who would willingly have repaired the errors of his predecessors, and when a new edifice was to employ the skill of the architect, it was found that nothing remained of his former power, and that he had no resource but to copy and combine the different styles of building already in existence. Much ignorance of the proportions of the several parts of the building, and little regard to their connexion with each other, seems to have distorted the works of this period; while the profusion of ornament employed, was equally offensive to a correct taste.

From the death of Constantine, we may trace the rapid decline and corruption of the art. The triumphal arches of Severus, Gallienus, and Constantine, the edifices of Palmyra and Balbec, and the palace of Diocletian at Spalatro, are all overloaded with badly sculptured ornaments; in some of them we find columns which have been taken from other edifices, and which have been cut to the required length, without making the bulk of the shaft to correspond with their lessened height; and again, we find that others which were too short, have been raised to the required height by placing them on pedestals. The entablatures are often broken, and project over the capitals of the columns attached to the walls; thus destroying the unity of the horizontal band, and the fine effect arising from the long lines of shadow above the columns; while the pedestals interrupt and spoil the effect of the continuous basement, and the frieze, instead of presenting a vertical face, is cut into a cylindrical form, and bears the appearance of a beam crushed by the cornice above. The first principles of stability are violated, by the capricious employment of columns with spiral flutings; pediments are inscribed in each other; some have not the horizontal cornice; others are bounded by a curve at the top; while the tympanum is occasionally broken in a vertical direction into three different faces; and the inclining sides in some are not continued to the apex. These gross deviations from the classic styles of Greece and Rome, like the gilded statues and colossal figures of the same period, indicate the wild excesses to which men were liable by neglecting to cultivate pure taste. As might be expected, sculpture declined before architecture; for though a building may require a greater effort of genius for its first invention, than is required for the formation of a statue, yet it is much easier to copy the proportions of an edifice than those of a human figure; in fact some of the most splendid buildings were erected at Rome when sculpture had ceased to exist as a fine art.

In the palace of Diocletian, at Spalatro, we find the earliest examples of arches springing from the tops of columns, which afterwards became common in ecclesiastical edifices, but which, in the building in question, presents a signal example of corrupt taste; for the column has the *appearance* (whatever may be its real strength) of being inadequate to the support of an arch and the building above it; nor is it in reality capable of supporting the thrust which every arch exerts, in a lateral direction, on its points of support. The corrupt style of the later ages of Roman architecture is visible in many of the representations of buildings depicted on the walls of Herculaneum and Pompeii, where we even find the forms and proportions of that style which has since been called the Gothic.

We have not yet alluded to one circumstance, which, trifling as it may appear, produced nevertheless considerable influence on the forms of ancient buildings: we mean the want of window-glass, that beautiful and admirable substance, the use of which we enjoy so much as a matter of course, that we can scarcely imagine a house or large building destitute of it; and yet the ancients for a very long space of time were not able to admit any considerable quantity of light into their apartments without at the same time being exposed to all the inclemencies of climate and season; to avoid which, and at the same time to enjoy light, they had recourse to lamps. It was however customary for them, in the construction of their dwellings, either to leave small open spaces near the ends of the rafters which rested on the walls, or to introduce, just under the projection of the eaves, a sort of wide low window; and by either method a small share of light from without was obtained within. In their smaller temples the requisite illumination was obtained through a spacious entrance-door; and their larger temples were but partially roofed, so that light might descend and illuminate what was little better than a spacious court-yard. Dwelling-houses presented to the street nothing but a dead wall; all openings for light were directed towards a large open court. Even in the sumptuous baths of Titus, where the noble group of the Laocoon was in a room of the most costly marble, artificial light was employed for the display of these beauties. One effect of the obscurity of the ancient buildings, both public and private, was the transaction of so much business in the open forum, or public place. Public exhibitions were also made during the day-time in the open air; the theatres were without roofs; but an awning was provided to shelter the audience or spectators from the sun or the rain.

5. THE FIRST CHRISTIAN ERA.

It need not excite surprise that the history of architecture in early times should relate chiefly to the public buildings, or places of worship of the ancients. Religion has exerted a powerful influence in all times, and among all nations, upon architecture, a complete history of which as a science, is little more or less than a history of man's progress in civilization. Until the time when our reformed faith exercised its benign influence, we find that man bestowed his care on his temples, rather than on his domestic dwellings, as if to propitiate the object of his worship by offering an abode fit for Divine occupation. The form and general construction too of the temple was influenced not only by the state of art in the country, but also by the pecu-

liar nature of the sacrifices offered therein. Before the great truth became fully impressed upon the human mind that God "desireth not sacrifice and delighteth not in burnt offering," the smoke of the heathen sacrifice rose high into the air from within the temples; for the same open roof which admitted the light, was also favourable to the peculiar forms of pagan worship.

In the early ages of Christianity, when those who had embraced its tenets were compelled, through dread of persecution, to keep their belief and their modes of worship as secret as possible, we find that religious assemblies were held in private houses, or even in public catacombs; but there is reason to believe that, as soon as the storm of persecution began to abate, the early Christians, zealous in the cause of their Divine Master, began to seek for the possession of public buildings for the celebration of religious worship. The intervals of persecution being short, they might not perhaps be able to *erect* churches, but they would seek to avail themselves of such edifices as were already in existence, and could easily be adapted to their purpose. Thus it has been found that the Christians were in possession of buildings, used as regular churches, before the time of Constantine, and that an edict was issued by that emperor for repairing, as well as rebuilding churches, thus proving that they were in existence at that period.

The Christian worship required not, like that of the heathens, extensive courts in which to perform their sacrifices; but consisting as it did chiefly of exhortation and prayer, a covered building of sufficient size to contain a large congregation, was all that was necessary for their purpose. Such buildings were the *basilicæ, i.e., royal* houses, apartments, or courts erected for the administration of justice. Constantine gave two basilicas, the Sessorian, and that in his palace of the Lateran, to serve as churches; and he afterwards built other churches after the same form. The ancient name of these buildings was preserved, and the new churches were also termed basilicæ, perhaps for the purpose of avoiding a name offensive to heathen ears, or it might be merely on account of their being designed after the form of those buildings. And when Theodosius had more firmly established the Christian religion as the religion of the empire, and had pulled down the churches of Constantine, which were already in a state of decay, with the smaller heathen temples, in order to use the materials for his new churches; he still retained the plan and the name of the *basilica*.

Nor could a more commodious form of building have well been found for the uses of Christian worship than that of these courts, the general form of which was rectangular, and divided into three or more parts by rows of columns parallel to the length of the building; another colonnade, at each extremity, crossed the former at right angles; in the middle of the end wall was a recess, in which was situated the tribune of the judge; and at that end of the building was formed a transverse division, by the discontinuance of the colonnades, which gave to the interior division the form of a CROSS. The recess formerly occupied by the tribune was found a convenient place for the altar; and that station it continued to occupy until artists were induced to alter the rectangular form of the building, in order to give to its exterior also the form of a cross. A transverse rectangle was now added, which crossed the former building at or near the middle of its length; the altar was placed in the intersection of the two, and that part of the church was afterwards surmounted with a dome or cupola, rising above the rest of the roof.

The body of the church or basilica was called the *nave*, perhaps on account of the early Christian constitutions, that the church should represent the ship* of St. Peter. This term was afterwards confined to the space between the central rows of columns, while the lateral divisions were called *aisles*, and the arms of the transverse rectangle, *transepts*. The form of the cross was different in the churches of Italy, and in those which were copied from them, to that which was adopted by the churches of Asia, Constantinople, and Greece. The Italian churches have the transverse building placed at, or near the extremity of the main body of the edifice, and this is called the *Latin cross*. Most of the churches of Asia, &c., have the buildings intersecting each other in the middle, in such a way as to make the four arms of equal length; and the centre, like the Italian churches, is covered by a dome. This plan of building bears the name of the *Greek cross*.

Between the colonnades and the walls, the basilicæ frequently had upper galleries; and when these buildings came to be devoted to the purposes of religion, the galleries were appropriated to the use of females, who could ascend to them by means of steps cut in the thickness of the wall, being themselves unseen by the rest of the congregation. Seven churches were built or consecrated in Rome during the reign of Constantine, who showed himself laudably disposed, now that the religion of Christ had been established in his empire, to erect for its service edifices that should do honour to it, as well as to the Roman name. Nevertheless the pagan worship does not seem upon the whole to have been much shaken at Rome during his reign. The central parts of the city appear to have been "wholly given to idolatry," and we find that all his churches were on the outskirts, at a distance from the walls.

When the seat of the empire was removed to Constantinople, that city was gradually adorned and elevated to a degree of magnificence almost equal to that of the ancient capital. It was enriched by Constantine with many stately edifices, among which were the cathedral of Sancta Sophia, or *Holy Wisdom*, and a church dedicated to the apostles. We are told by Gregoire de Tours, that a magnificent church in Auvergne and another in Palestine were built by Constantine. His mother Helena also caused several edifices for Christian worship to be erected in the east; the most celebrated being the church of the Holy Sepulchre at Jerusalem, and a church at Bethlehem.

Among the Latin churches, we find that the principal façade of the building was generally towards the west, while in the case of the primitive Greek churches, it is said to have been towards the east, that the priest in celebrating the service might have his face directed that way. The semicircular recess at one end of the basilica, had the name of *apsis*, which is a Greek word signifying an *arch*, and this was the place destined for the throne of the bishop. In front of the apsis was the Sanctuary, or Chancel, (which latter name is derived from the *cancelli*, or rails, which separated it from the nave,) elevated above the pavement, and approached by steps, but only by those who officiated as ministers. This sanctuary, which was at the east end of the building, contained the grand altar, and was separated from the rest of the building by a railing, or lattice-work. The *ambones*, or pulpits, were placed one on each side of the central division of the nave; and in the centre was the *presbyterium*, a place enclosed, and like our present choirs, appropriated to the deacons and chanters. Between the presbyterium and the entrance was the *narthex*, afterwards called *Galilee;* and this was devoted to the use of penitents. There were generally galleries over the aisles, with arcades in front, which have been supposed to have been a mere screen; but it is most likely that they were made for the purpose of supporting the roof.

We have already mentioned catacombs, as some of the first places where the meetings of the early Christians were held. The altars on which they performed their sacred rites were not unfrequently the tombs of some of their own community, who had undergone martyrdom for the sake of their faith. By degrees, as the remains of saints and martyrs came to be held in high veneration, and to be considered as gifted with peculiar sanctity, the custom became prevalent of erecting churches over their tombs; and a rule was finally established, never to consecrate an altar till the body of some saint had been placed within or beneath it. But, as these holy relics grew in importance and in the estimation of the people, it became desirable to advance them to some more conspicuous station, or one in which they might be more easily accessible by the number of pilgrims who came to visit them. A receptacle was therefore prepared for them in the centre of a lofty crypt, or vault, which was partly raised above, and partly sunk beneath, the level of the floor. A number of steps descending downwards led the way to this vault from the nave or transept; and other steps ascended from it to that part of the sanctuary raised over the crypt, while its contents might be seen from above through grated apertures. Immediately over the tomb of the saint was placed the altar, which, from its elevation to the summit of the crypt, became a more conspicuous object from all the other parts of the building.

Thus catacombs* which first afforded shelter to the early Christians, and a place for the performance of religious rites, and which afterwards became their burial-places, were ever often visited as holy places, and afforded models for imitation in the receptacles which were made for the bodies and limbs of saints in succeeding ages. The church of San Martino, at Rome, was built by Pope Symmachus, in the

* The Greek words for a ship and a temple are nearly identical.

* This word is derived from a Greek verb, implying *to sleep*.

year 500, over a subterraneous chapel which is still in existence, in which were deposited the remains of Pope St. Sylvester. There are also other crypts in Rome, at Ravenna, in the island of Torcello, at Verona, at Parma, Florence, Milan, &c.

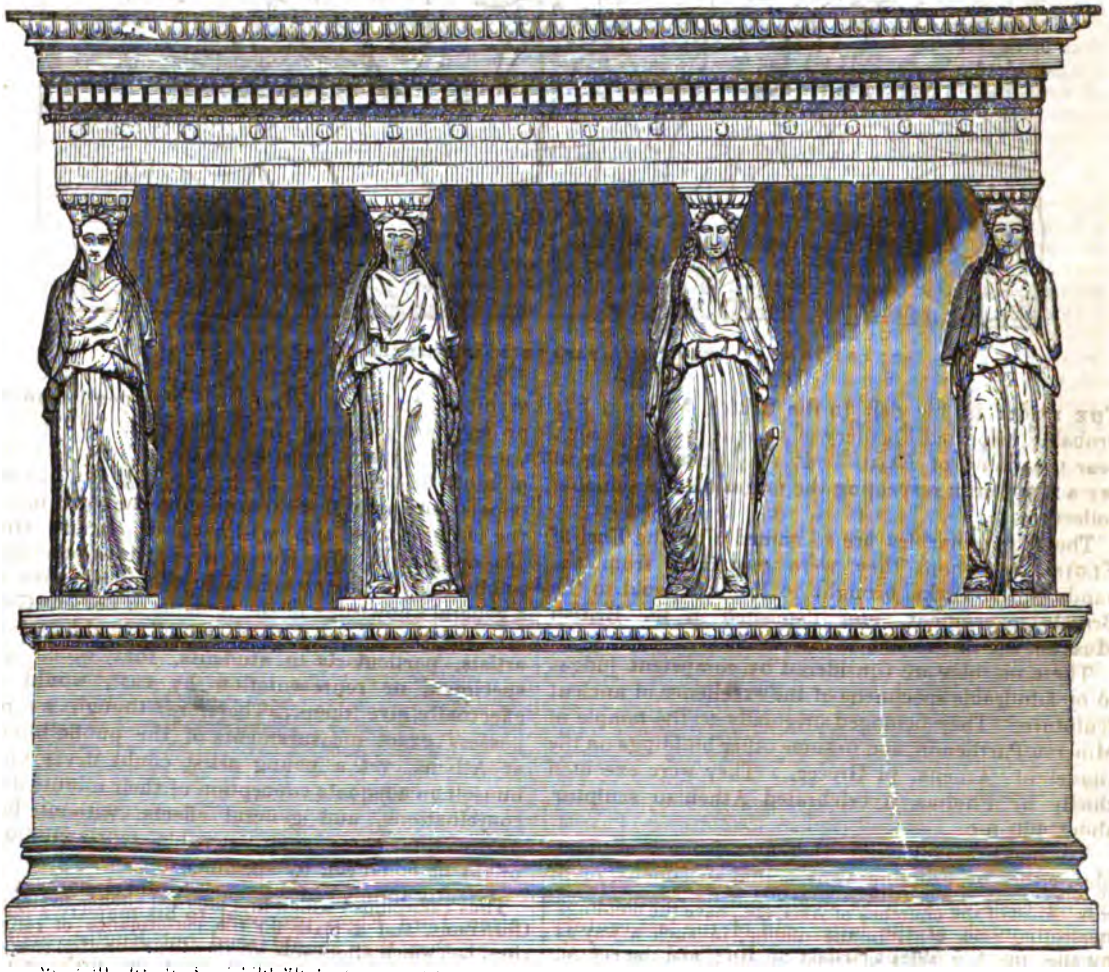
The cathedral of Sancta Sophia, at Constantinople, after having been twice destroyed by fire, was rebuilt by Justinian, about the year of our Lord 532. It was completed in about six years from the time of laying the foundation, and the work was carried on during that period under the daily personal inspection of the emperor, who pleased himself with the idea that he had even exceeded the temple of Solomon itself in the magnificence of this splendid edifice. The plan of the Greek cross was employed in this building, the centre of which is covered by a dome of admirable structure.

To the Christian religion may be attributed the rescuing of the remains of ancient architecture from ruin, and the revival of genius occasioned by the opportunity given to artists of employing their talents in the erection of buildings to the Divine honour. It is doubtful whether Constantine could have found the necessary supply of materials for all the buildings raised at Rome during his reign, but for the employment of fragments of the heathen temples; and in the adaptation of these to his purpose, he must in some measure have followed the design of the temples from which they came.

Thus, although some of the basilicæ of the heathens, which had been erected at an early period, might be equal in merit to the best works of the Augustan age, yet as those of a later date were doubtless constructed under the influence of the same bad taste which is visible in the baths and triumphal arches, so the churches also must have partaken of their defects: and this is really the case. In several instances the columns in these churches have been taken from other edifices, and fitted to their places by the expedient of cutting off from those which were too long, and mounting on pedestals those which were too short, for their purpose; and this without reference to the alterations thus made in the proportions of the members of the order.

Amidst this capriciousness of style and disregard of the principles of architecture, there was a love for that which might surprise and dazzle the beholder; and this feeling seems to have been experienced by Justinian, when he so perseveringly superintended the building of Sancta Sophia, according to the design furnished by Anthemius, his architect. The erection of the dome of this building must have been at that period a work of considerable difficulty; to raise a dome on the tops of four piers was then a novelty; and the horizontal pressure and thrust outwards being very great, the difficulty of resisting it must have been equally so; and accordingly we find that the dome failed twice before it could be rendered secure.

The recesses, which were almost universal in religious buildings, may probably have led to the formation of high and narrow windows; for the convexity of the wall would not permit broad windows to be made with either horizontal or arched tops, on account of the voussoirs projecting obliquely outward between their abutments, and consequently not being properly supported. Narrow windows would therefore naturally be preferred; and to obtain a sufficient degree of light, it would be necessary to increase their length in proportion to the diminution of their breadth. The construction of the church of Sancta Sophia has been very generally followed: the great ecclesiastical structures of Italy, and the mosques of Mohammedans present a nearly similar appearance.



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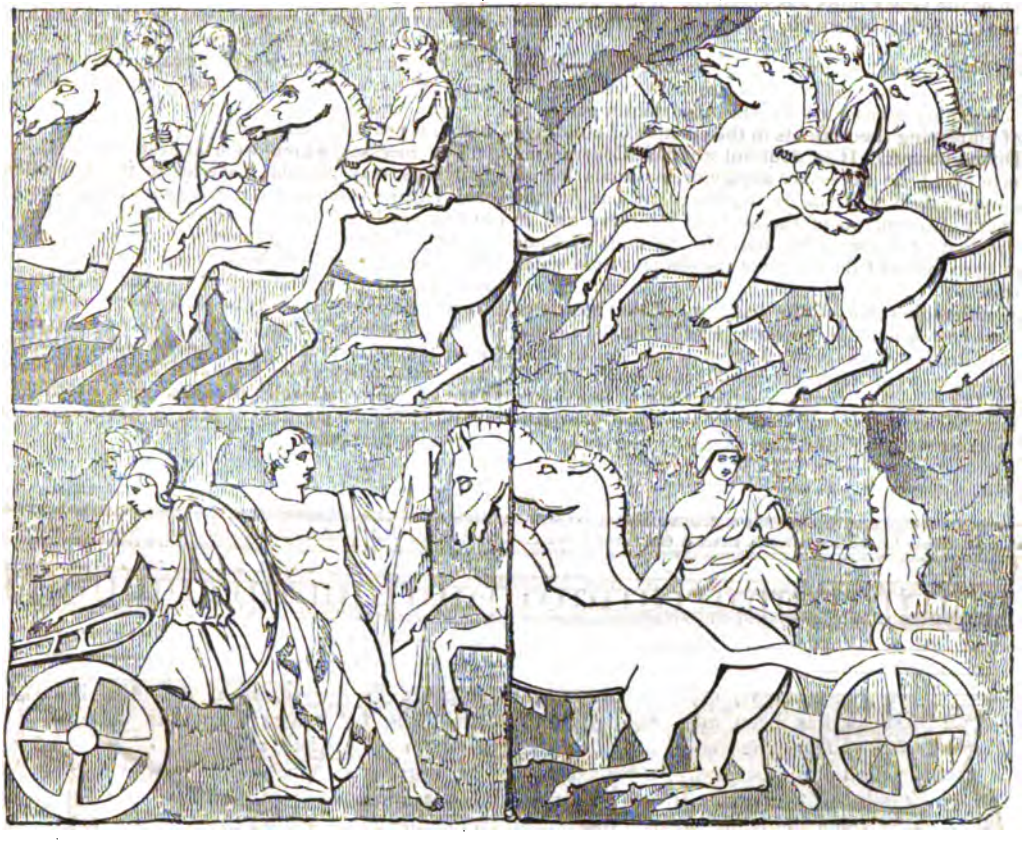
THE ELGIN MARBLES. No. I.



FROM THE PANATHENAIC FRIEZE.

THE reader in his visit to the British Museum has probably inspected a gallery of antique marbles which bear the name of ELGIN. It may be interesting to say a few words respecting the origin of this valuable collection.

The Elgin marbles are so named after the Earl of ELGIN, by whom they were recovered from the hands of the Turks, brought to England, sold to the British government, and deposited in the British Museum for the benefit of the public.

These marbles are considered by competent judges to be admirable specimens of the excellence of ancient sculpture. They belonged originally to the temple of Minerva Parthenon, and to some other buildings on the citadel of Athens, in Greece. They were executed chiefly by Phidias, a celebrated Athenian sculptor, about 400 B.C.

To make a collection, therefore, from these marbles, either by bringing away actual specimens, or by taking casts of such as might not be removed, was recommended, at the latter end of the last century, by the most eminent artists of England, as of the highest importance to the arts. It fell to the lot of the Earl of Elgin, the British ambassador at the court of Turkey in the year 1799, to appreciate this recommendation, and to Mr. Harrison, an experienced architect, to join in making it. This gentleman, while professionally serving Lord Elgin in Scotland, was consulted by his lordship on the benefits that might possibly be derived to the arts in England, in case an opportunity should be found for studying minutely the architecture and sculpture of ancient Greece. The opinion of Mr. Harrison was, that, though the public was in possession of everything to give them a general knowledge of the remains of ancient Grecian art, yet there was nothing which would convey to artists, particularly to students, that which actual specimen, or representation by cast, would more effectually give them. Therefore, though we might possess exact measurements of the public buildings at Athens, yet a young artist could never form to himself an adequate conception of their minute details, combinations, and general effects, without having before him some such sensible representation as might be conveyed by specimens or casts.

Greatly influenced by such counsel as was thus given, Lord Elgin proposed to his majesty's government, that they should send out English artists of known eminence, capable of collecting information on this subject in the most perfect manner. But the whole affair seemed to be of too indefinite a nature, and the cost of undertaking it too uncertain, for the

ministers to recommend it to parliament. Lord Elgin then endeavoured to engage some of the principal artists in the country to assist him in his views; but the value of their time being beyond his means, the business was dropped for a while.

It was not however the original intention of Lord Elgin to bring away the marbles from their native abode but only to obtain drawings and casts of them. He was however incited to carry away such of the treasures of antiquity as were most valuable, in consequence of observing the very wilful devastation to which all the sculpture, and even the architecture, was daily exposed on the part both of the Turks and travellers; the former influenced both by mischief and by avarice, as well as by a religious feeling, the Mahommedan faith strictly forbidding any sculptured representations of animals; and the latter from the wish to become possessed of some relic of ancient Greece. His lordship was likewise tempted, and enabled, to gratify his wish for removing the marbles, by reason of the increasing amity of our relations with the empire of Turkey.

When Lord Elgin was on his voyage to Constantinople, he touched at Palermo, in Sicily, where Sir William Hamilton was stationed. Upon consulting with Sir William on the subject of the fine arts, he was encouraged by him in his idea of procuring drawings and casts from the sculptures and architecture of Greece, and more particularly from the specimens existing at Athens. By the advice and assistance of Sir William, therefore, Lord Elgin was enabled to engage six of the first artists of Rome, two architects, two modellers, a draftsman, and a painter. When Lord Elgin had obtained, with much difficulty, permission from the Turkish government to establish these six artists at Athens, they systematically prosecuted the business of their several departments during three years, under the general superintendence of Signor Lusieri, the painter.

Accordingly, every monument, of which there are any remains in Athens, has been most carefully and minutely measured, and from the rough drafts of the architects, (all of which are preserved,) finished drawings have been made of the plans, elevations, and details of all the most remarkable objects, the sculpture being restored in the casts with exquisite taste and ability. Accurate drawings have also been made of all the *bassi relievi* on the several temples, in the precise state of decay and mutilation in which they at present exist. Hence nearly all the characteristic features of architecture in the various monuments at Athens have been moulded, and the moulds of them brought to London. All similar remains, likewise, which could be traced through several parts of Greece, have been measured and delineated with the most scrupulous exactness.

When English influence prevailed at the porte, in the early part of the present century, Lord Elgin's exertions were so successful that he brought to England, from the ruined temples at Athens, from the modern walls and fortifications, in which many fragments had been used as blocks for building, and from excavations in the ruins, such a mass of Athenian sculpture, in statues, *alti* and *bassi relievi**, capitals, cornices, friezes, and columns, as, with the aid of a few of the casts, to present all the sculpture and architecture of any value to the artist or man of taste, which can be traced at Athens.

One of the most considerable difficulties of Lord Elgin's undertaking, was the removal of the enormous and ponderous pieces of marble, a distance of nearly five miles, from Athens to the port, in a country without roads, without machinery, and without any other resources than manual exertion. He had to convey them to England, to bring them from the outports to London, and to keep them there at a considerable expense. One of his lordship's vessels with marbles was wrecked off Cerigo, an island south of the Morea; but the marbles he recovered with infinite labour, perseverance, and cost. In addition to all this, it is well known that no operations can be conducted in Turkey without the distribution of presents; which are always proportioned to the rank of the parties, and the eagerness or difficulty of the pursuit. So that, while Lord Elgin endeavoured to further his purpose with the chief men at Constantinople, his artists had to purchase the good-will of the persons in authority on the spot, on every occasion when assistance was required.

When Lord Elgin left Turkey in 1803, he dismissed five of the artists, sent home the amount of his collections, and left Lusieri at Athens, to continue such general operations as might tend to make the entire collection more complete.

It was Lord Elgin's first intention that the works of the draftsmen should be engraved for general sale; and that, in order to derive the utmost advantage from the marbles and casts, the mutilated statues, &c., should be restored. For this purpose he went to Rome, to consult and employ Canova, the most eminent sculptor of the day. His decision was conclusive. On examining the specimens shown him, and making himself acquainted with the whole collection, by means of the artists, who had returned to Rome with Lord Elgin, Canova declared that "it would be sacrilege in him or any man to presume to touch them with his chisel." The judgment pronounced by Canova respecting the excellence of the sculpture of the marbles, and the impropriety of attempting to restore them, has been sanctioned by all the chief artists and men of taste of the day. The marbles have been constantly visited and studied by the most eminent painters and sculptors, who testify to the perfection to which the art of sculpture had advanced under Phidias among the ancients. They likewise confess themselves struck with the strict anatomical truth of the designs; their wonderful accuracy, with the great effect of minute detail, and with the life and expression so distinctly produced in every variety of attitude and action. The elder painters and sculptors of the day regretted that they had not possessed, when younger, the opportunity of studying these models, which, in the view of professional men, form the most valuable collection in existence.

In the year 1811, Mr. Perceval was disposed to recommend to parliament the sum of 30,000*l.* to be given for the collection as it then existed; but the offer was then declined by Lord Elgin, who kept on for some time longer adding to the collection.

In 1815, Lord Elgin, in a petition to the House of Commons, offered to transfer the property of his collection to the public, upon such conditions as the house might deem advisable, after an inquiry upon evidence into its merits and value.

After some debate, the subject was referred to a committee, who came to a unanimous opinion in favour of Lord Elgin's conduct and claims, which opinion was distinctly expressed in the report which was the result of their examination.

After entering into and examining various pecuniary details, and having ascertained the prices paid

* The terms *basso* and *alto relievo* are of modern Italian origin. The former refers to that kind of sculpture in which the figures do not stand out in full proportion; the sculpture is low or flat. In the latter the figures are entire, or nearly so, being attached only in few places.

for other celebrated collections of marbles, the committee came to the resolution that they should not be justified, in behalf of the public, if they were to recommend to the house a greater amount of payment than 35,000*l.*, which, under all the circumstances of the case, they judged to be a reasonable and sufficient price for the collection. The sale was accordingly effected by an act of parliament, dated July the 1st, 1816.

The possession of some of the Athenian marbles was greatly desired by the government of France at the end of the last century, and in part accomplished, while French interest prevailed in the Divan. Other countries have not less coveted such a collection. We are told that the present King of Bavaria, in the year 1816, lodged 30,000*l.* in an English banking-house, in order to treat for the purchase of the Elgin marbles, if refused by the British Parliament.

Tuesdays and Thursdays in every week, and the whole month of September in every year, when daylight is usually steady and strong, are now exclusively devoted to artists and students, who seek to improve their taste and conceptions by attention to the ELGIN marbles in the British Museum.

In a future article we propose to state some further particulars respecting these invaluable relics of ancient art.

THE vulgar imagine that everything which they see in print must be true. An instance of this is related by an Englishman, named Martin, who was thrown into the Inquisition for neglecting to pay due respect to a religious procession at Malaga. One of the Father Inquisitors took much pains to convert him; and, among other abuses which he cast on the reformed religion and its professors, affirmed that King William was an Atheist, and never received the Sacrament. Mr. Martin assured him this was false to his own knowledge; when the reverend Father replied, "Never tell me so: I have read it in a French book."

FROM the desire which mankind have had, in all ages, to preserve the memory of important and interesting transactions, many expedients were employed to transmit knowledge to succeeding ages, before the invention of writing. Groves and altars, tombs, pillars, and heaps of stones, were the representative symbols of past transactions, and memorials to instruct posterity. We find from various parts of the book of Genesis, that the patriarchs raised altars, where God had appeared to them.

THERE is an invisible pen always writing over our heads, and making an exact register of all the transactions of our life. Not our public conduct only, and what we reckon the momentous parts of our life, but the indulgence of our private pleasures, the amusement of our secret thoughts, and idle hours, shall be brought into account.—BLAIR.

ON OBTAINING COPIES OF ENGRAVINGS AND MEDALS BY MEANS OF GALVANISM.

I.

MANY persons are in the habit of inquiring "What is the use of science?" They have probably attended a few scientific lectures, have seen a quantity of apparatus, and have witnessed various experiments performed by its means; but they are often inclined to look upon the former as "toys at rest," and upon the latter as "toys in motion." Such persons seldom gain any useful information from a scientific lecture, because they undervalue science, and know nothing of its vast importance in elucidating the wisdom of the Almighty, as displayed in the natural laws: of its vast importance in ameliorating the condition of the whole human family; in creating and sustaining our arts and manufactures; in supplying many of our wants, and materially increasing our comforts; such persons, in short, do not consider that one great difference between the civilized man and the savage is that the one has at command all the resources of science which the other has not.

When we regard the experiments at the lecture-table as miniature representations of the grand operations of nature, we then take a just and exalted view of the importance of experimental science. Nothing then is so minute or trivial as to be below our regard, because nothing in nature, however minute, is trivial. We know that whatever advantage we gain by our knowledge of nature can only be gained by an obedience to nature's laws; and in proportion as we are acquainted with these the more perfect will be our obedience; we shall not, in short, attempt impossibilities, but all our plans and proceedings will be guided by a perfect model which the Almighty has allowed us to contemplate, and partly, and by slow degrees to understand.

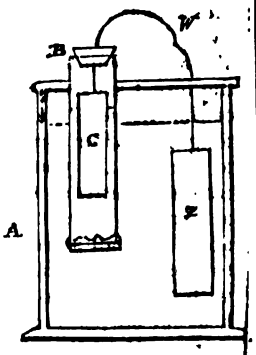
In proportion then as science improves, its applications to the arts and conveniences of life will be greatly multiplied. The numerous inventions of modern times are strictly due to our improved state of science; and in recording these inventions from time to time, we make a direct acknowledgement of the value of science, and the high estimation in which we hold its professors.

A short time ago we invited our readers to notice the wonderful fact of a picture, far more exquisite than could be produced by art, painting itself by the action of light; we have now to invite attention to a no less wonderful production,—a copper plate engraving itself by the action of galvanism, or a medal producing a perfect copy of itself by the same means. These, indeed, appear marvels, but they are nevertheless truths—marvellous truths,—which the reader, although unskilled in scientific resources, need not find it difficult to understand.

The reader is probably aware that a species of electricity, called, after the names of its original discoverers, Galvanic or Voltaic electricity, is developed by the action of a liquid, and two metals such as copper and zinc: that by means of this electricity not only are numerous striking effects of light and heat produced, but chemical substances are decomposed, and certain mineral bodies reproduced in a crystalline form.

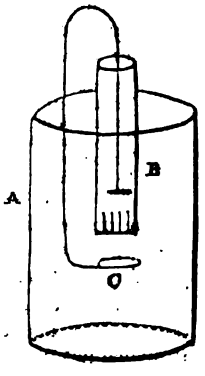
The annexed figure and explanation will afford a very instructive example of the action of a voltaic battery, and will be quite sufficient to render our subsequent details intelligible. A is a vessel filled with a solution of common salt, which is a compound of chlorine and sodium; B is a tube immersed therein, closed at the lower end with a piece of bladder stretched over it and firmly tied; this tube is filled

with a solution of blue vitriol, that is, a compound of sulphuric acid and oxide of copper. A plate of copper C, and one of zinc Z, connected by means of the wire W are immersed in those fluids. The zinc decomposes the salt, with the chlorine of which it unites, forming chloride of zinc, while the sodium of the salt is repelled, and passing through the bladder, enters the solution of sulphate of copper, which it decomposes, uniting with the sulphuric acid and oxygen to form sulphate of soda, and setting free pure copper, in the form of beautiful crystals, which are deposited on the plate C. The connecting wire W serves to convey electricity from C to Z, and thus the action is maintained so long as any common salt and sulphate of copper remain undecomposed.



The discovery of the method of engraving by means of galvanism is due to Mr. J. Spencer, who in trying some experiments with a voltaic arrangement such as we have described, and being desirous that no action should take place on the conducting wire W, covered it with a sealing-wax varnish, and in doing so dropped a portion of it on the copper plate C. He thought nothing of this circumstance at the time, but set the battery in action. A few days after, on examining the copper plate, he found it covered as usual with copper crystals, except on the part which had been spotted with the drops of varnish, and he at once saw that he had the power to guide the metallic deposition in any desired shape or form, by means of a corresponding application of varnish, or other non-metallic substance.

Mr. Spencer's first attempt was made with a piece of thin copper plate, which he covered with a cement of bees' wax, resin, and Indian, or Calcutta, red. The plate received its coating while hot, and on becoming cool, the experimenter scratched the initials of his name upon the plate, being careful to clear away all the cement from the scratches, so as to expose the copper below. A piece of zinc was attached to this plate, by means of a copper wire, and the voltaic current was set in action by means of the simple apparatus shown in fig. 2.



A cylindrical glass vessel, A, was filled about half with a saturated solution of sulphate of copper. A common gas glass, B, was stopped at one end with plaster of Paris, to the depth of three quarters of an inch; the plaster of Paris serving the same purpose as the bladder in fig. 1. A solution of sulphate of soda was poured into the gas glass, and the wire connecting the zinc and copper plates being bent, as shown in the figure, the zinc plate was immersed into the solution of sulphate of soda, and the copper plate into the solution of sulphate of copper.

In a few hours Mr. Spencer found that the portion of the copper rendered bare by the scratches was coated with the pure bright deposited metal while those portions which were still covered with cement were not acted on. It now became an important inquiry whether the deposition would retain its hold on the plate, and whether it would be of sufficient solidity to bear working from; that is, supposing an etching or engraving to be made, and the lines to be afterwards filled up with copper by the voltaic process, whether such lines could be printed from.

In order to answer this last question, Mr. Spencer coated with cement a piece of copper, and with a steel point endeavoured to draw lines in the form of net-work, so as to penetrate the cement, and expose the copper. After this plate had been exposed to voltaic action, and then heated, so as to get off the covering of cement, the copper net-work came off with it. This happened many times; but by an accident it occurred to the experimenter to employ nitric acid to the plate, after it had been cemented and engraved on as before. It was then subjected to the voltaic process for forty-eight hours, when the lines were found to be entirely filled with copper. On applying heat, and then turpentine to get off the cement, it was found that the voltaic copper had completely combined with the plate on which it was deposited.

A plate was then coated with cement, and lines worked upon it by an engraver; but these lines were of a wedge-shaped form, leaving only a hair line of the copper exposed at the bottom, and a broad space near the surface; and where the turn of the letters took place, the top edges of the lines were galled and rendered rugged by the action of the graver. All this was objectionable; but another plate, similarly prepared, and engraved on with a sharp point, had the copper deposited on the lines, and this was printed from successfully.

Considerable difficulty was experienced in finding a proper cement, or etching ground. One that seemed best adapted to the purpose, as far as the etching or engraving process was concerned, contained lead, which became deposited on the copper plate, and thus prevented the voltaic copper from uniting with the sheet copper. Another cement was therefore adopted, consisting of bees' wax, whiting, resin, a small portion of gum, and plaster of Paris. This answered the purpose tolerably well; but by an extended practice Mr. Spencer thinks a better might be obtained.

One of the most important applications of the electrotype (as this new branch of art is called) is the execution of metallic ornaments, either in cameo or intaglio. Now, as no metallic deposition can be made by voltaic electricity without the presence of a metallic nucleus, the difficulty was to remove the coating of voltaic copper from a coin or medal, &c., after it had been deposited.

After many failures, the following plan succeeded. A coin was slightly heated, until it would melt virgin wax; it was then wiped apparently completely off; but a minute film of wax still remained, sufficient to prevent absolute contact between the voltaic copper and the surface of the coin.

The coin was then subjected to the voltaic process for a few days, during which time a thick coating of copper was deposited on its surface. This was taken off by applying the heat of a spirit-lamp to the back of the coin, when a sharp crackling noise took place, the coin was completely loosened, and thus a complete and perfect mould of the coin was procured. By an easy application of the voltaic process, copper was deposited in this mould, (taking care first to cover it with a very thin layer of wax,) and thus impressions were made.

Another method of copying coins was successfully adopted; the coin was placed between two pieces of clean sheet lead, and then subjected to pressure at a screw press. Thus a sharp mould of both sides of the coin was procured, and the voltaic copper was precipitated into this mould. The heat of a spirit lamp ap-

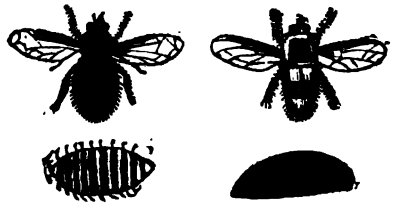
plied to the lead was sufficient to release the copper, in consequence of the different expansibility of the two metals when subject to heat.

In taking casts of non-metallic bodies, such as ornaments of wood, clay, plaster of Paris, &c., they were first dipped in oil, or varnish, and a metallic powder was sprinkled over their surfaces, or they were covered with gold or silver leaf. In this way the voltaic copper was readily deposited on them.

In another article we will point out numerous other applications of the electrotype, and supply such information as will enable any of our readers, at a very trifling expense, to procure for themselves correct copies of coins, medals, metallic ornaments, &c.

THE GAD-FLY.

Through waving groves were Selo's torrent flows,
And where, Alborno, thy green Ilex grows,
Myriads of insects flutter in the gloom,
(*Œstrus* in Greece, *Asilus* named at Rome)
Fierce and of cruel hum. By the dire sound
Driven from the woods and shady glens around,
The universal herds in terror fly:
Their lowings shake woods and shake the sky,
And Negro's arid shore.—VIRGIL.



THE term gad-fly has been employed to denote the various species of a family of insects, parasitic on horses, oxen, and other animals. These insects much resemble large common flies, but the body is often ornamented with bands of different colours, like the humble bees. The wings are very strong, and in general fully extended; the mouth of the insect, when in its winged state, is nearly obsolete, its place being supplied by three small tubercles, which are not fitted for organs of nutrition. Each species of this remarkable family is confined to its own particular quadruped, and displays much skill in the selection of the fittest spot for the deposition of its eggs.

The animals which have been ascertained as subject to their attacks are the horse, ox, ass, rein-deer, stag, camel, sheep, hare, and rabbit. Although there is reason to believe that the deposition of the eggs is rather annoying than painful to the several animals, yet the degree of terror which the approach of the gad-fly produces in them is very great. Horses are much agitated at the sight of it: they toss their heads, and gallop to a distant part of the pasture, in the hope of driving it away, or escaping from its pursuit. This is not, however, to be easily effected: the fly often keeps up with their pace, and follows her victim wherever he goes. His only chance of escape now lies in plunging into the stream, and if there is one at hand, he thus effectually rids himself of the annoyance, for the gad-fly never follows him there. If no water is near, the fly soon finds an opportunity of accomplishing her purpose. Selecting the part where she designs to deposit her egg, she hovers over it for a few seconds, then suddenly darts down and leaves the egg adhering to the hair; this is so rapidly done that she hardly appears to settle, but merely to touch the hair and leave the egg affixed, by means of the glutinous liquor which is secreted with it. She then retires to a short distance from the horse, and prepares another egg which she attaches to the animal in precisely the same way, then another, and so on. Other flies repeat the operation, so that as many as four or five hundred eggs have been placed on one horse The most wonderful part of this proceeding is that the insect invariably places the eggs on those parts of of the horse's body which are within reach of his tongue. After four or five days these eggs are ready to produce the young worm upon the smallest application of heat, so that when the horse licks that part of skin on which they are deposited, the eggs readily open. Small active worms issue forth, and clinging to the moist surface of the tongue, they are carried with the food into the animal's stomach. Here, in a heat far surpassing that of our warmest climate, these worms attain their full size, and on this taking place, they detach themselves from the hold they had taken within the animal, and are voided by it. They then seek some convenient situation and assume the pupæ state, and after six or seven weeks appear in the form of a fly. There are no less than five species which form the torment of horses, and trouble the short repose allowed to this noble animal. In Germany the grooms make use of a particular kind of brush, with which they cleanse the mouths and throats of the horses, and thus free them from these troublesome insects before they are carried into the stomach.

The uneasiness occasioned to the horse by the different species of gad-fly is supposed to arise solely from the irritability occasioned by the deposition of the eggs, for it is maintained by those who have closely studied the subject, that the animal receives no pain from their residence within his stomach. They fasten on the cuticular or insensible coat, and their presence is not found to affect the health of the animal. It is impossible to remove them by medicine, because they reside in a part of the stomach to which medicines are not usually conveyed. This being the case, it would appear useless to take any measures for the removal of these insects, except where they are found on the coat of the horse, where they sometimes come to life, and not adhering to the tongue, so as to be conveyed to their usual destination, crawl about a few days to the great annoyance of the animal, and then die. One species of gad-fly to which the horse is subject, always deposits its eggs on the *lips* of the animal and is even more distressing to him than those we have just described. It perseveres in its attempts, notwithstanding all the efforts made to avoid it, and often hides in the grass till the horse is grazing tranquilly, when it fastens on the desired situation.

We now come to speak of this insect, as it affects another valuable quadruped, the ox.

The angry gad flies fasten on the herd,
That startling scatters, from the shallow brook,
In search of lavish stream. Tossing the foam,
They scorn the keeper's voice, and scour the plain,
Through all the bright severity of noon;
While, from their labouring breasts, a hollow moan
Proceeding, runs low-bellowing round the hills.—THOMSON.

The description also given by Kirby and Spence of the appearance of a herd of oxen, under the attack of gad-flies, is true to nature.

At certain seasons, the whole terrified herd, with their tails in the air, or turned upon their backs, or stiffly stretched out in the direction of the spine, gallop about the pastures, making the country re-echo with their lowings, and finding no rest till they get into the water. Their appearance and motions are, at this time, so grotesque, clumsy, and seemingly unnatural, that we are tempted rather to laugh at the poor beasts than to pity them, though evidently in a situation of great terror and distress. The cause of all this restlessness and agitation is a small gad-fly, (*Œstrus bovis*) less than the horse-bee, the object of which, though it be not to bite them, but merely to oviposit in their hides, is not put into execution without giving them considerable pain.

It is this particular gad-fly whose assaults on cattle Virgil has so accurately described in a passage of his *Georgics*, a translation of which appears at the head of this article. This fly has been minutely described by Reaumur, who affirms that, in depositing the egg, the insect bores a small hole in the skin of the ox, by means of a singular organ of a horny texture, somewhat resembling an auger or gimlet. Mr. Bracy Clark does not admit this to be the case, but after close examination states that the parent insect merely glues the eggs to the hair of the animal, as in the case of the horse-bee, and that is not till the living insects appear, that the puncture is made. These larvæ are called *warbles*, or *wurmals*, and after they have burrowed into the skin they form around themselves bumps or protuberances on the back of the ox, where they enjoy an equal degree of warmth, are protected from inclement weather, and remain till they arrive at maturity, with an abundant supply of food within reach. These tumours vary in number on the animal from three or four, to thirty or forty. The cattle most covered with them, are not disesteemed by the farmer, for it is on young and healthy subjects that they are chiefly found. The tanners also prefer those hides which contain the greatest number of *bot-holes*, (as they are commonly called,) as being the best and strongest. The situation of the tumours is generally near the spine, but sometimes upon the thighs and shoulders. The largest of them are nearly an inch and a half in diameter at the base, and about an inch high: they can scarcely be perceived during summer, but in winter attain their full size.

During the time in which the larva inhabits the bump, it is necessary that it should receive a due supply of air; and this is singularly provided for by the situation of the spiracles, or breathing process, in the insect's body. Instead of being placed according to the general situation, along the *sides* of the body, the spiracles are placed at its hinder extremity, which is kept constantly applied to the orifice in the bump, and receives its supply of air from thence, while its mouth is farthest from the surface, and gains its supply of food from the secretions caused by the irritation of the insect. The attack of the fly is attended with some danger, when the oxen are employed in agricultural work; for whether in harness or yoked to the plough, they become unmanageable, and run directly forward.

Nor are our flocks exempt from the annoyance of the gad-fly. Sheep are sometimes observed, in the heat of the day, to shake their heads, and strike the ground violently with their fore-feet; or they will run away to dusty spots, ruts, or gravel-pits, where, crowding together, they hold their noses close to the ground. This is with a view to rid themselves of the fly, (*Œstrus ovis*) and to prevent its entering their nostrils, where it lays its eggs around the inner margin. When the larvæ issue from the eggs, they make their way into the head, and when full grown, they fall through the nostrils to the ground, and assume the pupa state. We have no means of knowing whether the sheep suffers much pain from these insects; but from the strange freaks it occasionally performs, when infested by them, there is reason to suppose that they have, to say the least, a teazing and irritating effect. Sometimes the maggot makes its way even into the brain.

The fallow-deer, according to Reaumur, are subject to the attack of two species of gad-fly; one of which deposits its eggs in the same manner as that of the ox, so as to produce tumours; the other, like that of the sheep, so that its larvæ can make their way into the head. There is a curious notion prevalent among the hunters respecting these two species. Believing both insects to be of the same species, they imagine that they mine for themselves a painful path under the skin to the root of the horns, where they congregate from all parts of the body, and where, by uniting their labours, and gnawing indefatigably, they occasion the annual casting of the horns. Ridiculous as this fable is, it is sanctioned by some authors.

The rein-deer is still more cruelly tormented by these insects. The gad-fly takes the opportunity of depositing its eggs at the time when the animal sheds its hair, about the beginning of July. The hair then stands erect, and the insect is always fluttering near, to the great terror of its victim. Ten of these flies will put a herd of 500 deer in the greatest agitation. The poor animals tremble, change their position incessantly, sneeze, snort, stamp, and toss continually. The fly closely pursues them if they flee from her, and keeps up with them as they bound over precipices, valleys, snow-covered mountains, and even the highest Alps. In their flight, the animals always choose a direction contrary to the wind, as an additional means of gaining advantage over their enemy. By this constant fear and agitation, they are kept from eating during the day, and are ever on the watch, standing with ears erect, and eyes attentive to all around them.

There is also a species of gad-fly appropriated to hares and rabbits, in America; and this is said to be the largest species of *Œstrus* yet discovered.

Recent observations likewise go to prove that there is either a species of this family appropriated to man, or that the same sorts which attack quadrupeds, under certain circumstances, attack human beings. In South America it is common to see Indians with their stomachs covered with small tumours, produced by a species of *Œstrus*. This insect is said to penetrate the deeper the more it is disturbed, so as, in some cases, to produce death.

A SUNDAY THOUGHT.

How calm the quiet, sweet the rest,
That breathes at such a time;
How dear to every pious breast,
The church-bells' soothing chime.

A day of prayer, of holy thought,
And blessed peace it is;
And did we keep it as we ought,
A day of sacred bliss.

How welcome then of all the seven
This day would be allowed;
A foretaste of the joys of heaven,
A passport to our God.—E. T.

CHRISTIANS possess what Archimedes wanted; they have another sphere on which to fix their hold; and, by that means, can be enabled to move, to influence, and to benefit this present world of transitory enjoyments; a world which is in reality safe and precious to those alone who use it without abusing it, and who are ever looking beyond it to a building of God, a home not made with hands, eternal in the heavens.—MRS. OPIE.

THE sincere and earnest approach of the Christian to the throne of the Almighty, teaches the best lesson of patience under affliction; since, wherefore should we mock the Deity with supplications, when we insult him by murmuring under his decrees? or how, while our prayers have in every word admitted the vanity and nothingness of the things of time, in comparison to those of eternity, should we hope to deceive the Searcher of Hearts, by permitting the world and worldly passions to reassume the reins, even immediately after a solemn address to heaven?—SIR WALTER SCOTT.

LITERATURE, like society, advances step by step. Every treatise and book of value contains some particular part which is of more value than the rest; something by which it has added to the general stock of human knowledge or entertainment;—something, on account of which, it continues to be read and admired while an old one. Now, it is here different portions of every different volume, that united, form the effective literature or knowledge of every civilized nation, and when collected, form the different languages of Europe, be literature and knowledge of the most civilized portion of mankind. It is by these parts of more peculiar and original merit, that these volumes are known: it is these to which every man of matured talents and matured education *alone* reverts: it is these which he endeavours chiefly to remember: it is these that make up the treasures, and constitute the capital, as it were, of his mind. The remainder of each volume is but that subordinate portion which has no value, but as connected with the other; and is often made up of those errors and imperfections which are, in fact, the irreparable attendants of every human production, which are observed and avoided by every writer or reasoner who follows, and which gradually become in one age only the exploded characteristics of another.—SMYTH'S *Lectures on Modern History.*

THE subject of a man's thoughts contributes much to the formation of his character. He whose imagination is wont to dwell on the world and worldly things, will be apt to contract a character of a worldly cast. He will be "of the earth, earthy." But he who is used to lift up his thoughts to high and heavenly things, and delights to feed his mind with the prospect of "the glory that shall be revealed" in the bodies of just men raised incorruptible, and in their spirits made perfect; of the excellency of their abode, and the purity of their joys, and the holiness of their companions, and the unmingled godliness of their pursuits and occupations in the presence of God and of Christ, will hardly fail of deriving thence by God's blessing, and infusing into his own character some particles of a celestial spirit; and of advancing, by means of these "exceeding great and precious promises," in that improvement of the inner man, which St. Peter terms a "partaking of the divine nature." As "the skin of Moses' face shone," when he had been holding converse with the Lord on Mount Sinai, so will the soul that ascends to "Mount Sion," and meditates on "the city of the living God, the heavenly Jerusalem," with all its appropriate and divine accompaniments, reflect in some degree its loveliness and splendour, according to that beautiful similitude of St. Paul, where he is describing the excellency of the Gospel dispensation: "We all, with open face, beholding as in a glass," or mirror, "the glory of the Lord, are changed into the same image from glory to glory, even as by the spirit of the Lord."—BISHOP MANT'S *Happiness of the Blessed.*

THE NATURAL HISTORY OF THE MONTHS.

VI. JUNE.

And after her came jolly June, arrayed
All in green leaves, as he a player were;
Yet in his time he wrought as well as played,
That by his plough-irons mote right well appeare.
Upon a crab he rode, that him did bare
With crooked crawling steps an uncouth pase,
And backward-yode, as bargemen wont to fare,
Bending their force contrary to their face.—SPENSER.

COLERIDGE well describes the characteristic of this month, when he terms it "the *leafy* month of June." However forward the season may happen to be, it is not before the commencement of June that we see the trees in their full and rich clothing. The frosty nights in May frequently check their advance, but about this time their foliage becomes fully developed, and they stand before us in all the freshness of renewed youth. June is in our climate the most delightful month of the year: the heat is not excessive, but only sufficient to render our morning and evening rambles full of enjoyment. All that the old poets say of May, becomes applicable at the beginning of June. Now indeed we may go forth at early dawn, and gather hawthorn-blossoms; now may we tread the dewy mead, and explore the green and shaded lane with impunity; the various productions of the hedges and fields everywhere invite our notice; flowers are scattered in gay profusion about our path, and all the scenes of nature are calculated to please.

The mower has not yet put in his scythe, to deprive the fields of half their beauty: the landscape therefore may be considered more complete at this period than at any other part of the year. The crops are all springing and flourishing in the vigour of their youth, reminding us of the corresponding season in the life of man, ere yet the interference of worldly care has checked the freshness of his feelings, and the ardour of his hopes. An old poet sings—

Summer is ycomen in,
Loud sing cuckoo:
Groweth seed,
And bloweth mead,
And springeth the weed new;

and it is indeed this growing and springing forth of nature that constitutes the charm of the season.

How beautiful now are some of our tall hedgerows: the blossom of the dog-rose "blushes through all the gradations of delicate red and white," and is frequently intertwined with that of the tender and fragrant woodbine; the nightshade hangs out her purple blossoms; the bright blue eyes of the speedwell look out from the grassy bank; the small bind-weed curls gracefully round some neighbouring plant, and turns its beautiful face towards the sun; the tufted vetch presents its light festoons; creeping cinquefoil traverses the bank, and illumines it with golden flowers; while overhead the blossoms, or the fruitful branches of elder, mingle with the lively green of young oaks, and the arched boughs of the common bramble.

Most of the numerous kinds of grass come into ear and flower during this month:

Shot up from broad rank blades that droop below,
The nodding wheat-ear forms a graceful bow,
With milky kernels starting full, weighed down,
Ere yet the sun hath tinged its head with brown.
BLOOMFIELD.

This is a most important family of plants to man. Wheat, rye, barley, oats, rice, maize, &c., form his chief subsistence, and in this class is also found the sugar-cane, to which he is so greatly indebted. One only of the family is injurious, and this is the *Infelix lolium* of Virgil, and the *darnel* of English writers, which is very poisonous, and produces vertigo, delirium, and sometimes death. The *Lolium arvense*, or white darnel, is the most generally injurious to wheat-crops, the *Lolium temulentum*, or bearded darnel, being more frequent among barley and flax. While growing together, it is very difficult to distinguish the blade of the darnel from that of the wheat, but as soon as the fruit appears, the difference is evident enough. Great care is necessary in separating the seeds from the wheat. There is every reason to believe that the darnel is the weed mentioned in Scripture under the name of "*tares*." The weeds to which we give the name of tares at the present time, do not at all answer to the scriptural account. They resemble clover rather than wheat, and instead of being pernicious, are sometimes made use of as food for cattle, while in times of scarcity their seeds have been safely used by man.

The smaller kinds of grass make the chief food of our domestic cattle, and when in ear, and before their seeds are ripened, are fit to be cut down, and converted into hay for winter use.

The washing and shearing of sheep are the early occupations of this month.

On the bank
Of a clear river, gently drive the flock,
And plunge them one by one into the flood:
Plunged in the flood, not long the struggler sinks.
With his white flakes, that glisten thro' the tides;
The sturdy rustic, in the middle wave,
Awaits to seize him rising; one arm bears
His lifted head above the limpid stream,
While the full clammy fleece the other laves
Around, laborious, with repeated toil:
And then resigns him to the sunny bank,
Where, bleating loud, he shakes his dripping locks.
DYER.

These operations are not commenced till the weather becomes sufficiently warm and settled for the removal of so large a portion of the sheep's clothing. The same poet tells us that

If verdant elder spreads
Her silver flowers; if humble daisies yield
To yellow crowfoot and luxuriant grass,
Gay shearing-time approaches.

In some parts of the kingdom, the shearing time is kept as a rural festival, the hospitable board is spread, and song and merriment succeed the labours of the day. This vestige of a custom which prevailed even in patriarchal times is however dying away.

Towards the close of the month, the busy season of hay-making commences. The numerous blossoms with which the fields and meadows are overspread, yield to the mower's scythe, and the luxuriant grass, before it becomes dry and has lost its nutritious juices, is converted into hay. The weather is now watched with some anxiety, and while it remains favourable, all hands are employed in turning the hay, and getting it safely stacked before any change of weather takes place. Thus a common proverb has arisen, with respect to the necessity for diligence in important affairs, and the danger of letting slip a favourable opportunity,—"We must make hay while the sun shines."

This is the time for evening walks; the scent of the new mown hay is wafted on the cool breeze; the voices of songsters are less powerful than in May, but still fall sweetly on the ear; the beetle wheels his droning flight; as twilight comes on, the owl and the bat flit through the air, and perhaps a low, melodious gush is heard:

A noise like of a hidden brook
In the leafy month of June,
That to the sleeping woods all night,
Singeth a quiet tune.

An interesting object to the naturalist is the angler's may-fly, which generally appears about the fourth of June, and continues in succession for nearly a fortnight. It is the most short-lived in its perfect state of any of the insect race, only existing five hours from the period of its emerging from the water. The cricket and the grasshopper appear during this month; various kinds of flies, among which is the formidable gad-fly, are seen; and that remarkable insect, the stag-beetle*, is in some districts common.

On the twenty-first of this month the *summer solstice*, or longest day, occurs, at which period there is no real night; the twilight continuing almost from the setting to the rising of the sun. The greatest heat of summer is not yet arrived, yet the season is called *Midsummer*. The St. John's wort (*Hypericum*,) is now common: it had formerly many superstitions connected with it, and was used in the ceremonies practised on Midsummer eve, the vigil of St. John's day.

* The stag-beetle is described at p. 144 of the present volume.

Every day is now making some accession to the list of summer ripening fruits. The delicious and cooling strawberry is one of the earliest of these; and the early sorts of gooseberry and cherry are now ripe. Our tables are well supplied with fruit tarts, with wholesome vegetables, and with salad. That a due supply of these may be kept up, the garden must receive its share of attention: peas and beans should be sown for late crops, the succession of cucumber plants kept up, winter crops of potatoes, turnips, &c., put in, celery placed in treaches, slips of southernwood, lavender, hyssop, sage, and other aromatic herbs planted in a shady place, and the winter supplies of herbs gathered in.

But let us once more wander to the fields, and taste the balmy fragrance of the air. The perfume is wafted to us from a field of clover, and scarcely does the season present to us a more beautiful object than this waving surface of silvery green, interspersed with the rich hues of its manifold blossoms. The busy hum of bees and of other insects is heard here from morn till night, and sumptuously are they fed upon the honied juices of the flowers. The bean-field is not less attractive: the odour of its blossoms, wafted from a distance, is exquisite.

Long let us walk
Where the breeze blows from yon extended field
Of blossomed beans. Arabia cannot boast
A fuller gale of joy, than liberal, thence
Breathes through the sense, and takes the ravished soul.

Frequently now do we see that bright child of the air, the butterfly, winging its ardent flight. It flutters past us, sparkling in the sunbeams, now high above us, now alighting at our feet, expanding its beautiful wings, and looking itself like one of those newly opened flowers on which it loves to repose.

See, (says Linnæus,) the large elegant painted wings of the butterfly, four in number, covered with small imbricated scales; with these it sustains itself in the air the whole day, rivalling the flight of birds, and the brilliancy of the peacock. Consider this insect through the wonderful progress of its life; how different is the first period of its being from the second, and in both how different it is from the parent insect; its changes present to us an inexplicable enigma; we see a green *caterpillar*, furnished with sixteen legs, creeping, hairy, and feeding upon the leaves of a plant; next we see a *chrysalis*, smooth, shining with a golden lustre, hanging suspended to a fixed point, without feet, and living without food: this insect again undergoes a transformation, acquires wings and six feet, and becomes a variegated *butterfly*, living by suction on the honey of plants. What is there in nature more worthy of admiration!

The appearance of the country at the close of this month, when the hay is carried, and the fields are like a succession of level lawns, with scarcely a daisy to spangle their surface, reminds us that the beautiful season of spring has passed away. It is gone before we had fully entered into its enjoyment: it has stolen away, like the years of our own life, almost imperceptibly. That stream of time, which

No wealth can bribe, no prayers persuade to stay,

has carried it along with it, ere yet our expectations and our projects were realized. How important then to seize the passing moment; to work while it is called *to-day*, at all that is really useful and important.

Be wise to-day, 'tis madness to defer;
Next day the fatal precedent will plead;
Thus on, till wisdom is pushed out of life.—YOUNG.

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THE TOWN OF ADARE, LIMERICK.

RUINS OF THE BLACK ABBEY.

THERE are probably but few places of similar size throughout the United Kingdom, containing more numerous remains of the ecclesiastical establishments of past ages, than the little town of Adare, in the county of Limerick. We will briefly detail the early history of the town, before speaking of these establishments.

Adare is situated a few miles south-west of the city of Limerick. The early history of the town is not known, previous to the arrival of the English in Ireland, in the time of Henry the Second. About the year 1279, John Fitzjerald, first earl of Kildare, built a monastery, since called Black Abbey, and represented in our frontispiece. This monastery was dedicated to the Holy Trinity, and amply endowed for the redemption of Christian captives. About the year 1310, Adare was incorporated by Edward the Second; and about sixty years afterwards, Edward the Third issued a writ to the sheriff of the county, and all officers connected with the subsidies, &c., prohibiting them under heavy penalties from demanding of the provost or commonalty of Adare any services or customs, until the town, which had been then recently burned and destroyed by the insurgent Irish, should be fully rebuilt and inhabited.

A castle was built at Adare by the O'Donavons, rebuilt by the second Earl of Kildare in 1326, and enlarged and fortified by several of his successors. The castle was afterwards ravaged and burnt by Turlough O'Brien, but soon repaired. A charge of treason having been brought against one of the earls, the castle was declared forfeited to the crown, but was subsequently restored to him. During the administration of Cardinal Wolsey, the Earl of Kildare had to go to London to prove his innocence of certain crimes charged against him, and shortly after this, the castle and the other family estates were again escheated to the crown. The castle was a frequent scene of political and warlike turmoil. In the year 1578 it withstood a siege of eleven days, but was at length taken by the English, and garrisoned by a powerful body of troops. An unsuccessful attempt to regain it was made by the Desmonds, which is thus described by an old writer:—

In 1579, John of Desmond, with 450 men, horse and foot, besieged the town: so that the garrison dared not peep abroad till their victuals failed them—and then necessity whetted their courage, and made their swords as sharp as their stomachs, so that Sir John was forced to retire. The English had but one small cot, which would hold about eight men, and by the help of it 120 men of the garrison were wafted over the river into the Knight of Glenn's country, and being unexpected there, did great exaction,

however, they staid so long, that the Knight of Glenn and Sir John collected thirty horse, and 400 foot,—some Irish and some Spaniards,—and coming up with them, a sharp skirmish for eight hours ensued: the English made good their retreat into Adare, without any considerable loss, and killed about fifty of the enemy.

On a subsequent occasion the Earls of Desmond and Kerry, with a strong force, captured the castle, and put the whole of the garrison to the sword. They were however doomed not to be long in possession of it, for Colonel Zouch came from Cork and took the castle,—imitating the example of his predecessors in putting the garrison to the sword. In less than twenty years after this it was again besieged by the insurgent Irish, but without success, although at one time the garrison were reduced to such distress that they were without food for several days and obtained a supply of water only by excavating a subterraneous passage to the bed of the river. The castle was captured in 1641; but upon being again retaken in 1657, in the time of Cromwell, it was ordered to be dismantled, and has never since been a place of defence.

We may now speak of the present appearance of the ancient buildings with which Adare abounds. The remains of the castle are still of considerable extent; but although the proprietor has taken some precautions to preserve it from utter ruin, it seems to be decaying rapidly. Black Abbey, which, as we have said, was originally a monastery, continued as such till the time of Queen Elizabeth, when, with the other religious house founded here, it was granted to Sir Henry Wallop, to be held for ever in fealty, in free and common socage, at a yearly rent of 26*l.* 17*s.* 8*d.*, on condition of his maintaining two able horsemen on the premises. Some large and perfect ruins of this friary still remain. The steeple or tower has a sort of castellated appearance, and is supported by a plain arch, with four diagonal ogives meeting in the centre, and stairs leading to the battlements: the nave and choir are small and plain, without anything remarkable: in the rear are several other ruins. The entrance to the friary was by a low gate on the west side, which is still standing.

Another abbey was built on the bank of the river Mague, and still presents many interesting remains of its former beauty. There are still to be seen the nave, the choir, and south transept of the church, which, with the exception of the roof, are tolerably entire. From the intersection rises a beautiful slender square tower; and the choir contains several stalls, niches, fonts, and stoups, some of them of very elegant forms. On the east side of the transept are niches, fonts, and three chantry chapels, or oratories. The cloisters are tolerably perfect, and round them are arranged the principal offices, the refectory, and various other domestic buildings. The prevailing style of architecture is the later English.

The remains of a third abbey are to be seen on the south side of the river. This was a Franciscan abbey, founded by Thomas, seventh Earl of Kildare, who married Joan, daughter of the Earl of Desmond. The remains consist chiefly of a lofty and slender square tower, a nave, and part of the conventual choir, recently fitted up by the Earl of Dunraven as the parish church. Some cloisters on the north side of the abbey have been restored by the earl, and a splendid family mausoleum erected near them. The refectory, and part of the domestic buildings, have been restored under the direction of the Countess of Dunraven, and fitted up as a school house; the restorations being made faithfully to correspond with the general style of architecture of the abbey. The school room is a spacious apartment, lighted by fifteen windows. A good dwelling house has been built for a master and governess; and the expense of this, as well as the whole expense for educating 300 children, is defrayed by the noble countess.

It will thus be seen that there are still remains of three ancient abbeys, as well as a castle, in this little town. Indeed it appears that there must have been still more than these; for when the grant, of which we have spoken, was made to Sir Henry Wotton, it included the Monastery of the Holy Trinity; the possessions of the Grey Friars, of the Preaching Friars, and of the Augustine Friars; the Abbey of Monaster na Aonaig, and the Nunnery of Moinistir na Gcailleach.

The old town of Adare, (that which contained the greater proportion of the buildings which we have been describing,) was on the eastern bank of the river Mague; but the modern town is on the western bank of the river, about half a mile distant from the old town. A narrow, level, but fine and much admired bridge of fourteen arches connects the two. It was built by the fifth Earl of Kildare, and is still in good preservation. The whole neighbourhood is in the possession of the Earl of Dunraven, who, as fast as the leases of the property fall in, makes every endeavour to improve the town. The town does not contain much more than a hundred houses, many of which are very old and badly built; but it seems probable, from the circumstance just alluded to, that the town will gradually improve. There are a modern hotel, post office, &c., and the mail from Limerick to Tralee passes through the town.

Near the town is the modern residence of the Earl of Dunraven, Adare Castle, which, when completed, will be one of the most splendid mansions in Ireland. The style of architecture of this noble building, which we believe is not yet quite completed, is that of the more enriched period of the later English. It is built of hewn limestone found upon the estate, and is situated on the western bank of the river, in a very extensive and finely wooded demesne, commanding a beautiful view of the numerous and venerable remains which we have described. Near the house stands an old ash tree, which is connected with a circumstance of no little interest to the proprietor of the mansion. On the approach of a party of marauders, during the disturbed state of Ireland consequent on the revolution of 1688, some family documents and other articles of great value were deposited under this ash tree, until the danger was past.

The neighbourhood of Adare contains a singular little community called Palatines: these were German Protestants, who settled here about the year 1740, since which time they have greatly increased in number, but still continue a distinct body. Mr. Fitzgerald says:—

> The parish contains about 5300 acres of land, a great part of which is cultivated, as many Palatine families reside here, who are a very industrious, sober, well-conducted people. Their houses and farms have every appearance of neatness and comfort; and they have of late intermarried with the natives, who, since they have been enabled to take leases for lives, have acquired habits of industry, knowledge of cultivation, and proper implements of husbandry, from the Palatine.

The river Mague is navigable from the Shannon to the town of Adare, by the aid of a short canal; and there are two quays, one at the termination of the canal in the town, the other about a mile down the river, both constructed at the expense of Lord Dunraven. There are eight fairs at Adare in the course of the year, for the sale of farming stock and implements: these fairs are well attended.

RESPONSIBILITY OF AN AGENT.

"WHOEVER," says Dr. Paley, "undertakes another man business, makes it his own; that is, promises to employ upon it the same care, attention, and diligence, that he would do if it were actually his own; for he knows that the business was committed to him with that expectation. And he promises nothing more than this. Therefore an agent is not obliged to wait, inquire, solicit, ride about the country, toil, or study, whilst there remains a possibility of benefiting his employer. If he exert as much activity, and use such caution, as the value of the business in his judgment deserves, that is, as he would have thought sufficient if the same interest of his own had been at stake, he has discharged his duty, although it should afterwards turn out, that by more activity, and longer perseverance, he might have concluded the business with greater advantage."

Mr. Macculloch remarks that there seems to be a great deal of laxity in this statement. It is necessary to distinguish between those who, in executing a commission, render their services for a particular occasion only, without hire, and those who undertake it *in the course of business*, making a regular charge for their trouble. If the former bestow on it that ordinary degree of care and attention which the *generality of mankind* bestow on similar affairs of their own, it is all, perhaps, that can be expected: but the latter will be justly censurable if they do not execute their engagements on account of others with that care and diligence which a "*provident and attentive father of a family*" uses in his own private concerns. It is their duty to exert themselves proportionally to the exigency of the affair in hand; and neither to do anything, how minute soever, by which their employers may sustain damage, nor omit anything, however inconsiderable, which the nature of the act requires. Perhaps the best general rule on the subject is, to suppose a factor or agent bound to exert that degree of care and vigilance that may *be reasonably expected of him by others*. At all events, it is clear he is not to be regulated by his own notions of the value of the business. A man may neglect business of his own, or not think it worth attending to; but he is not therefore to be excused for neglecting any similar business he has undertaken to transact for others.

As meadows parched, brown groves, and withering flowers,
Imbibe the sparkling dew and genial showers;
As chill dark air inhales the morning beam;
As thirsty harts enjoy the gelid stream;
Thus to man's grateful soul from heaven descend,
The mercies of his Father, Lord, and Friend!

SIR WILLIAM JONES.

MAN has never woven a tapestry like that which May spreads beneath us, in its green and flowery meadows; and where are the imitative works of art that can compete with a flower-garden, can even approach to a single flower? But we admire the imitations, and almost forget to look at the reality and the original. Yet while the former are costly, or even inaccessible, the others are given freely, without cost, and they are given freely to all. The Creator has even empowered us to create for ourselves, and almost without labour, beauty which no art can approach, and no price could teach it to rival. We sow a few seeds in a few minutes, and we become artists, under the kindness of the Great Artist, producing pictures, imperfect imitations of which we must have purchased with gold, as not all the gold of the universe could have stimulated an artist to approach to them.—MACCULLOCH.

MAN's a poor deluded bubble,
Wandering in a mist of lies;
Seeing false, or seeing double,
Who would trust to such weak eyes!
Yet presuming on his senses,
On he goes most wondrous wise,
Doubts of truth, believes pretences,
Lost in error, lives and dies.—DODSLEY.

PEACE is the proper result of the Christian temper. It is the great kindness which our religion doth us, that it brings us to a settledness of mind, and a consistency within ourselves.—BISHOP PATRICK.

ON OBTAINING COPIES OF ENGRAVINGS AND MEDALS BY MEANS OF GALVANISM.

II.

WE are too much accustomed to judge of the importance of an invention by its practical utility; and often denounce as useless an invention which cannot be immediately applied with perfect success. If this feeling were to become general among cultivators of science, our arts and manufactures would be incapable of further improvement, and, indeed, the human race would participate in the general apathy, and our physical condition would be in a state of retrogradation.

The inventor of the electrotype, in speaking of its application to the arts, expresses himself in modest terms. He does not entertain any very sanguine notions respecting its future general application to the art of engraving: this he leaves to the practical engraver and printer. He wishes for a fair trial of his invention, and feels assured that it may be found a useful addition to many trades, and branches of art; supplying as it does, a means of producing a cast or a die in hard metal, without the agency of heat or pressure, and in extreme perfection and well defined sharpness. Nor is its application confined to copper only, since the metallic salts in general, may, by the voltaic process, be made to deposit their metals upon any metalic nucleus that is presented to them. In addition to this, perfect copies may be obtained of bronzed figures, and these copies do not require chasing when taken out; nor does there appear to be any inconvenient limit as to size. Publishers of music may also by this process have their plates in relief. Copies of wood-engravings may also be made in copper by this voltaic process, which also bids fair to abridge the important process of stereotyping. Its use in the potteries may also be important, where eight or ten copper-plates of a similar pattern are often required; so that, one being engraved, the required number can be produced in voltaic copper.

It appears, then, that in the present early state of the electrotype, there are five distinct modes of application:

First, Engraving in relief on a plate of copper.

Second, Depositing a voltaic copper-plate with the lines in relief.

Third, Taking fac-similes of a medal, (reverse or obverse,) or of a bronze cast.

Fourth, Taking a voltaic impression from plaster or clay.

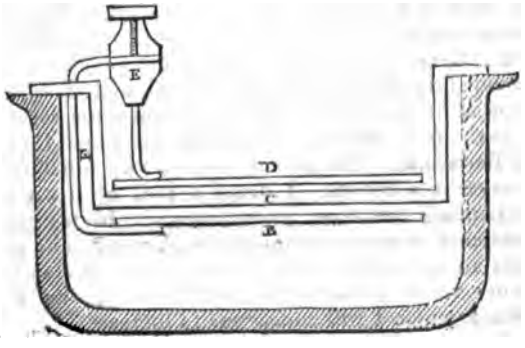
Fifth, Multiplying the number of already engraved copper-plates.

We now proceed to supply a few experimental details on the above applications of the electrotype.

1. To engrave in relief on a plate of copper.—To a plate of copper, such as is used by the engraver, let a piece of copper wire be neatly soldered. Give the plate a coating of cement, and when cool, write or draw the design on the wax, with a black lead pencil, or a point. Then cut through the wax with a graver or a steel point, taking care that the copper is exposed on every line.

The plate must now be immersed in an acid solution, composed of three parts water, and one of nitric acid. When the exposed lines are slightly corroded by the acid, the plate must be removed to the voltaic apparatus shown in the annexed figure, which represents a section of an earthenware vessel, A, containing a solution of sulphate of copper. C, an inner pan, of earthenware or wood, having a plaster of Paris bottom, made to fit into the interior of A, and

containing a saline solution. B, the copper-plate on which the voltaic copper is deposited: it is immersed in the sulphate of copper, and is supported by the wire F, which unites by means of the binding screw E, with the wire soldered to the zinc plate D, in the saline solution.



After the voltaic copper has been deposited in the lines engraved in the wax, the surface of the formation will be found to be more or less rough, according to the time employed in the voltaic deposition of the copper: to remedy this, the surface must be rubbed with a piece of smooth flag or pumice-stone, with water. Then, to remove the wax ground-work, the plate must be heated, and washed with spirits of turpentine and a brush. The plate is now ready to be printed from at an ordinary press.

2. To deposit a solid voltaic plate, with the lines in relief.—A plate of copper, lead, silver, or type-metal, is engraved to the depth requisite to print from; the lines must be flat at bottom, and, as nearly as possible, of the same depth. When thus engraved, the plate should be heated just sufficient to melt a small lump of virgin wax, mixed with a few drops of turpentine. Just before the plate becomes cold, the wax should be wiped apparently quite off: there will still remain a minute film of wax, quite sufficient to prevent the voltaic copper from adhering to the plate.

A piece of wire is then soldered to the back, and two coats of thick varnish (made by dissolving shell-lac in spirits of wine) applied to the back and edges of the plate; but Mr. Spencer recommends, if the plate be large, to imbed it with plaster of Paris, or Roman cement, in a box, the size of the plate, allowing the wooden edge of the box to project just as much above the surface of the plate, as the thickness of the voltaic plate is intended to be. Care must be taken to keep the engraved surface of the plate clean.

Should the engraving be made on lead, or type-metal, the preparation of wax is not required, because heat is sufficient to loosen the plates.

3. Fac-similes of medals, &c., may be taken by two different methods: the one by depositing a mould of the voltaic metal on the face of the medal, having first heated it, and applied wax; and then, by a subsequent operation, depositing the metal in the mould thus formed. The readiest way, however, is to take an impression of the coin or medal in milled sheet-lead, as described in the former article.

4. A voltaic impression, from a plaster or clay model may also be taken by the method described in the former article.

5. To obtain any number of copies from an already-engraved copper plate, an impression of the plate is made in lead, and if a powerful press be employed, the lead will have every line in relief that had been sunk in the copper.

Wood-engravings may also be copied by the same method. On this part of the subject, Mr. Spencer remarks,—

Plumbers who have handled lead for the greater portion of their lives are astonished to find it so susceptible of pressure. On the contrary, wood engravers did not, until now, imagine their blocks would stand the pressure of a screw press on a lead surface without injury; but such is the fact in both instances. In the manner in which box-wood is used for wood engravings, being horizontal sections, it will sustain a pressure of 8000lbs without injury, provided the pressure is perfectly perpendicular.

In the management of the simple apparatus which is employed in the electrotype, it is necessary to have the binding-screws, wires, and all metallic surfaces, quite clean and bright. The zinc plate should be occasionally taken out of the arrangement, during the continuance of the process, and cleansed by washing it in water; and the saline solution may also be occasionally renewed. Crystals of sulphate of copper should be added from time to time to the solution of that salt, in order to keep it saturated.

We now conclude our present notice of this interesting process, assuring our readers that if they are anxious to possess elegant and correct copies of medals, and coins, &c., they will find no difficulty in procuring and managing the simple apparatus described in fig. 2 of our former article.

INTERRUPTED MEDITATION.

'Tis a bitter thing in this life of pain,
When the spirit has spurned its earthly chain,
And sought in the bosom's still recess,
The joy of its own deep loneliness;
And though the sensations which then we feel,
May be rather of sorrow than of weal,
It is something to think there is that in their tone,
Which the spirit may drink in, all its own:
It is bitter then to hear the din
Of another's voice break rudely in,
And mar the mirror which just has caught
Some bright reflection, some cherished thought;
Some vision wove with so slight a spell,
That a sound or a word may the charm dispel,
And leave no trace of its path behind,
But a restless vacancy of mind:
As in those fair pictures that lie imprest
On a lake of the mountain's tranquil breast—
Shadows so faultless in shapes and dies,
That they only are not realities.
Let an air but steal down the mountain's side,
Let a pebble the sleeping waters divide,
Let a leaf but fall from a withered spray,
The fairy delusion will pass away,
And ripples and circles will crowd o'er the scene,
And confusion will revel where beauty has been.

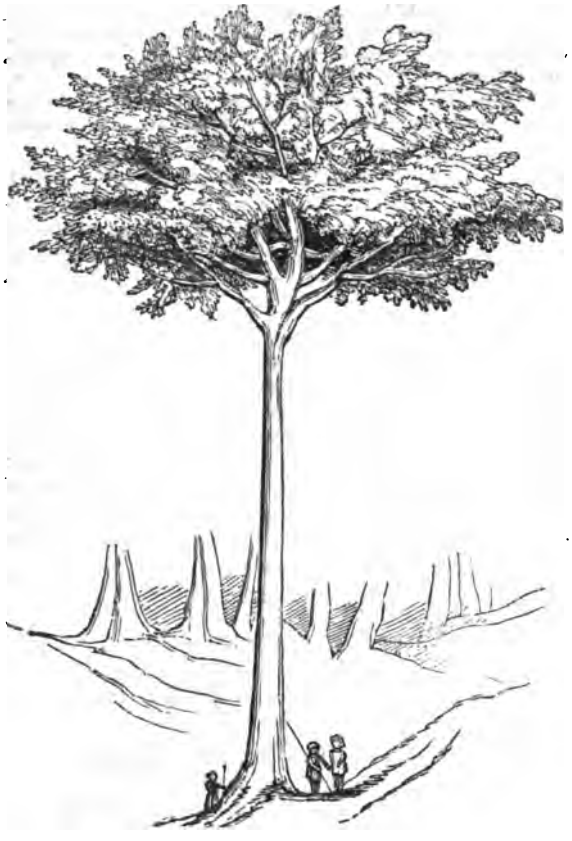
THE RUBI, *a Tale of the Sea.*

LET no one be seduced by the enthusiasm of noble thoughts to embark in an enterprise, of which he may not have securely weighed the motives and probable results.—WARD.

THE good in this state of existence preponderates over the bad, let miscalled philosophers tell us what they will. If our affections be tried, our affections are our consolation and comfort; and memory, however sad, is the best and purest link between this world and another.—DICKENS.

THE celebrated French philosopher, Lavoisier, author of *Elements of Chemistry*, and other scientific works, was executed, during the terrors of Robespierre's tyranny, for the pretended crime of having adulterated snuff with ingredients destructive to the health of the citizens! On being seized, he entreated at least to be allowed time to finish some experiments in which he was engaged; but the reply of Coffinhall, the president of the gang who condemned him, was characteristic of the savage ignorance of those monsters in human form:—"The Republic does not want *savans* or chemists, and the course of justice cannot be suspended."

THE COW-TREE OF THE CARACCAS,
(*Palo de Vaca.*)



HUMBOLDT describes the *Palo de Vaca*, or *Cow-Tree*, as growing on the shores of the Cordilleras, and found most pleatifully between Barbula and the lake of Maracaybo. "On the barren flank of a rock," says this interesting writer, "grows a tree with dry and leather-like leaves; its large, woody roots can scarcely penetrate into the stony soil. For several months in the year not a single shower moistens its foliage. Its branches appear dead and dried; yet as soon as the trunk is pierced, there flows from it a sweet and nourishing milk. It is at sunrise this vegetable fountain is most abundant. The natives are then to be seen hastening from all quarters, furnished with large bowls, to receive the milk, which grows yellow, and thickens at the surface. Some employ their bowls under the tree, while others carry home the juice for their children. This fine tree rises like the broad leafed star-apple. Its oblong and pointed leaves, tough and alternate, are marked by lateral ribs; some of them are ten inches long. We did not see the flower. The fruit is somewhat fleshy, and contains a nut,—sometimes two. The milk, obtained by incisions made in the trunk, is glutinous, tolerably thick, free from all acrimony, and of an agreeable and balmy smell. It was offered to us in the shell of the tutuno, or calabash tree. We drank a considerable quantity of it in the evening, before we went to bed, and very early in the morning, without experiencing the slightest injurious effects. The viscosity of the milk alone renders it somewhat disagreeable. The negroes and free labourers drink it, dipping into it their maize, or cassava bread."

I shall now quote from a communication on the subject from Trinidad, addressed by Mr. D. Lochhart, to A. B. Lambert, Esq., one of the vice-presidents of the Linnæan Society:—"I have just returned from an excursion to the Caraccas, where I collected the juice of a cow-tree, and I have now the pleasure of sending you a phial of the milk, together with a few leaves, and a portion of the root of the tree. The Palo de Vaca is a tree of large dimensions. The one that I procured the juice from had a trunk seven feet in diameter, and it was one hundred feet from the root to the first branch. The milk was obtained by making a spiral incision into the bark. Carauo, the place where I met with the tree, is about fifty miles east of La Guayra, and at an elevation of from 1000 to 1200 feet above the level of the sea. It is likewise found between Cape Codera and Barcelona. The milk is used by the inhabitants wherever it is known. I drank a pint of it without experiencing the least inconvenience. In taste and consistence it much resembled sweet cream, and possesses an agreeable smell. I was so fortunate as to procure some young trees and roots of the Palo de Vaca, which I will endeavour to increase."

"I had an opportunity," says Mr. David Don, "of examining attentively the leaves of the Palo de Vaca, and found them to approach very close to those of several South American species of *ficus*. The disposition of the nerves and veins was precisely similar, which, together with the insertion and consistence of the leaves themselves, appear to justify the propriety of the place assigned to the Palo de Vaca, by M. Kunth, who has arranged it in the family of *Urticeæ*, under the name of *Galactodendron utile;* but neither he nor myself have seen the fruit or flower; so that as a genus it rests on very insufficient grounds. The tree, however, is evidently related to *ficus* or *brossimum*. The juice contained in the phial sent to Mr. Lambert had the appearance of cream, and notwithstanding that it had suffered materially from the long voyage, the taste was by no means unpalatable."

Mr. Fanning, who came from the Caraccas to England in 1827, brought home small specimens of the cow-tree, the first ever seen in England, together with a drawing of the tree, and brought with him at the same time some of the milk, dried in the form of lozenges. These plants all unfortunately perished.

Sir Robert Kerr Porter has had the goodness to send me from the Caraccas, a bottle of the milk of the Palo de Vaca, together with the portion of a branch, containing three leaves from an *old* tree, and a branch with its leaves, of a *young* tree with a piece of the bark, and enhanced the truly valuable donation by a beautiful sketch of the tree itself, highly characteristic of his elegant pencil. I cannot resist the pleasure of giving entire the graphic description of his visit to the Palo de Vaca, as contained in his very interesting letter to me, under date, June 8, 1837.

"The period at which my visit was made to this marvellous vegetable production, unfortunately found it without flower or fruit; but as I have in vain for months and months past endeavoured to ascertain the particular time of either or both, I was compelled to seize the first leisure four or five days, to make an excursion into the mountainous part of the country where it grows.

"We journeyed over a most rugged suite of mountains to the Cordillera on the north coast, which occupies nearly its whole extent; and at a distance of fifty miles from this capital, at an elevation, I should suppose, of between four and five thousand feet above the level of the Carribean sea, reached the neighbourhood of the tree sought for, having passed the night at a sugar estate, in one of the pretty and productive vallies abounding near the coast. At six the following morning, attended by some natives, we began an ascent of about a league, up the face of an awfully steep

mountain, covered with a dense forest of enormous trees and thick jungle. The people were actually obliged to cut a pathway through the almost impenetrable hanging branches, and other bushy interruptions. After a most toiling walk, in a couple of hours we reached the Palo de Vaca grove, and I assure you that I felt most amply repaid, by the sight of so many marvellously huge vegetable productions, for all the fatigue I had already undergone. The tree our people first commenced their milking operations on, measured somewhat more than twenty feet in circumference, about a man's height, from its roots; from whence its magnificently colossal stem rose to full sixty feet, clear of the smallest branch or leaf. The vast arms and minor branches spread themselves at this elevation on every side, certainly to an extent from the centre of at least twenty-five feet; the whole luxuriantly clothed with immense leaves. This splendid portion of the tree I am sure cannot add less than forty additional feet to its wonderful elevation.

"The Indians of our company told us that the milk is far more profuse in its flowing when the requisite incisions are made in the bark on the increase of the moon, than it is on the decrease; however, we got a couple of bottles of it in a quarter of an hour, but from two trees. When the wound was made in that on which I looked with so much wonder and *indescribable feeling*, the snowy current broke forth with great violence. Its colour and consistency were precisely that of the animal milk, with a taste not less sweet and palatable; yet it left on the tongue a slight bitterness, and on the lips a considerable clamminess; an aromatic smell was most strongly perceptible when tasting it. I have sent you a small piece of the bark, in which is contained the lacteal fluid. It varies from an inch to one and a half in thickness. The wood forming the body of the tree is white, hard, and close grained. The dimensions I have given were exceeded, by many feet in every way, by numbers of others of the same species that grew within some yards around. The forest abounds in thousands of different kinds of trees, many even exceeding in size the wonderful Palo de Vaca. With regard to the *living colour* of the leaves, it differs little in depth of green and polish from those of the laurel leaf."

When the cork of the bottle of milk, transmitted by Sir Robert Kerr Porter, was withdrawn, it was followed by an explosive report, almost as loud as that of a pistol; succeeded by a violent effervescence and overflow of the lactescent liquid, accompanied by a copious disengagement of carbonic acid gas, in a visible form, resembling light smoke from its combination with aqueous vapour.

The consistence, taste, and smell were precisely that of thick sour cream, with curdy granulations deposited on the surface in contact, and it felt somewhat viscid or clammy to the touch. I used a little of it in *tea*, and it relished very well, and imperfectly mixed like sour cream, imparting a curdled appearance, and tasting somewhat balsamic.

The Palo de Vaca, whether considered in reference to its "milk," or rather cream, or its bark, affords products among the most remarkable of the wonders of vegetation. Both the milk and bark contain the elements of nutritious and wholesome food for man, and bread formed of its bark would be almost equal to that made from corn;—for the immediate or proximate parts of wheaten flour are found in the bark of the cow-tree—so that the Palo de Vaca yields both bread and milk.

[Abridged from *A Descriptive Account of the Palo de Vaca*, by JOHN MURRAY, F.S.A.]

ON MIGRATION.

II.

As fables tell, an Indian sage,
The Hindostani woods among,
Could in his desert hermitage,
As if 'twere marked in written page,
Translate the wild bird's song.

I wish I did his power possess,
That I might learn, fleet bird from thee,
What our vain systems only guess,
And know from what wide wilderness
You came across the sea.

THE MIGRATION OF BIRDS.

THE migration of the feathered race, has occupied much attention, and afforded subject for many curious inquiries, from a very early period to the present time, nor is the topic exhausted: numerous interesting facts still remain unexplained, and a vast field for observation still presents itself to scientific research.

Birds migrate northwards and southwards, so that there is in our latitudes at least a periodical ebb and tide of spring and winter visitors. The former gradually work their way as the season advances, from the warm regions of the south, where they have enjoyed food and sunshine, and have escaped the rigours of our winter; and arrive here to cheer us with their songs, and to make *our summer months still more delightful*. The latter being inhabitants of the arctic circle, and finding in the forests and morasses of that region, a sufficient supply of food in summer, are only led to quit their homes when the early winter begins to bind up the lakes, and the surface of the earth, and to deprive them of sustenance. It is then that they seek our milder shores, and accordingly at the season when our summer visitants are leaving us to proceed on their journey southwards, these songless inhabitants of the north arrive to take their places, and to feed on such winter fruits and berries, and such insects and aquatic plants, as are denied to their own inhospitable climate. These visitors, though mute, are of no mean value—for many of them are esteemed as delicate food, and in consequence the red-wing, field-fare, woodcock, snipe, widgeon, &c., are wont to receive homage and admiration from those who could listen to the sweet warblings of the nightingale, or the tender cooings of the turtle-dove with perfect indifference.

The visits of these birds, as well as of those from the south, depend greatly on the state of the weather, which appears to hasten or retard their flight as the season may be. Thus we often find that a few of our summer-birds leave the main body and arrive sooner than the rest, while the others have been kept back by a sudden return of unfavourable weather, according to the adage, "One swallow does not make a summer." It is a singular fact that the early comers are male birds, arriving as it would seem, in search of some fit spot to which to introduce their mates. The bird-catchers are aware of this, and prepare their traps accordingly, so that nightingales and other singing-birds are often snared on their first arrival, and spend the short remainder of their lives in captivity. Many birds return not only to the same country, but to the very spot they left in the preceding season, a fact which has been ascertained by catching and marking some of them; while other birds do not confine themselves to a particular country, but range from one to another, as circumstances may dictate.

It has been observed that certain migratory birds do not leave their summer abode, unless the winter is to be one of unusual severity. This fact is surprising;

and the question "By what means is the bird instructed as to the coming season," naturally presents itself to the mind, but still remains unanswered. What their instinctive knowledge is, and whether they have any power of reflecting on the phenomena by which they are surrounded, will ever probably be a mystery to us, but we may trace in this, as in numberless other instances, the care and wise arrangement of a superintending Providence, by which creatures small and insignificant in the scale of creation, are led to choose the climate most favourable to them, and to hasten towards another region, just at the period when a longer tarry in the one they inhabit would be fatal to their existence.

——Where the Northern Ocean, in vast whirls,
Boils round the naked melancholy isles,
Of furthest Thule, and the Atlantic surge
Pours in among the stormy Hebrides;
Who can recount what transmigrations there
Are annual made? what nations come and go?
And how the living clouds on clouds arise;
Infinite wings! till all the plume-dark air,
And rude resounding shore are one wild cry.

Most birds perform their migrations during the night, but there are some that travel only by day, and others that stop not either by night or by day. Among the first are the owl, blackbird, &c., and a great number of aquatic birds; among those that travel by day are the crow, pie, titmouse, wren, woodpecker, chaffinch, goldfinch, lark, swallow, and some others; and of those which do not intermit their flight are the heron, wagtail, yellow-hammer, stork, crane, plover, swan, and wild goose. These choose a bright moonlight season in which to set out on their journey.

The flight of birds has been estimated from fifty to a hundred and fifty miles an hour, though some heavy birds scarcely exceed thirty miles an hour. Bishop Stanley mentions in his *Familiar History of Birds*, an easy way by which the flight of birds may be determined with tolerable accuracy. Supposing any bird, a partridge, for instance, should rise from the middle of the stubble, and fly in a straight line over a hedge, all the observer has to do, is to note by the second's hand of a watch, the number of seconds between the birds rising and that of its topping the hedge; and then ascertain the distance between the point from whence it rose and the hedge, by stepping, and counting the number of paces; when, supposing each pace to be a yard, we have a common rule of three sum. Thus, if a partridge, in three seconds, flies one hundred yards, how many yards will it fly in 3600 seconds, or one hour?

Another method of ascertaining the flight of birds is by carrier-pigeons. The same author tells us of a recent instance, in which fifty-six of these birds were brought over from Holland, and set at liberty in London. They were turned out at half-past four o'clock in the morning, and all reached their dovecots at home by noon, but one favourite pigeon, called *Napoleon*, arrived about a quarter before ten o'clock, having performed the distance of three hundred miles, at the rate of above fifty miles an hour, supposing he lost not a moment, and proceeded in a straight line; but as they usually wheel about in the air for some time before they start, the first bird must have flown most likely at a still quicker rate. It is probable that most birds perform their journey to distant countries by stages of a few hours' flight, resting and recruiting their strength in convenient situations. We need not suppose them often to cross the wide expanse of the ocean, but take it at its narrowest portions, as the channel between France and England, the Mediterranean, &c., and so pursuing their way across the continent. Their power of remaining on the wing does not excite so much surprise as the motives which lead them to undertake such distant flights, and the instinct which guides them so unerringly in their aerial course; for though we have named the deficiency of food as one of the probable causes of migration, this does not apply in many cases we might mention, and we are more and more at a loss to account for the facts relating to several species of the feathered race.

Of all migrating birds, the cranes may perhaps be considered the most remarkable. They seem to be most endowed with foresight, and have every appearance of consultation and regular preparation for the time of their departure. They utter peculiar cries several days before, and assemble with much noise and bustle. They then form themselves into two lines, making an angle, at the vertex of which, one of their number, who is looked upon as the general director of their proceedings, takes his place. The office of the leader seems to be to exercise authority, and issue orders to the whole party, to guide them in inclement weather in their circling flight, to give the signal for their descent, feeding, &c. Piercing cries are heard, as if of commanding and answering to the command. If the leader grows tired, his place is taken by the bird next him, while he retires to the end of the line, and thus their orderly flight is accomplished.

Where the Rhine loses his majestic force
In Belgian plains, won from the raging deep,
By diligence amazing, and the strong
Unconquerable hand of Liberty,
The stork-assembly meets; for many a day
Consulting deep, and various, ere they take
Their arduous voyage through the liquid sky:
And now their route designed, their leaders chose,
Their tribes adjusted, cleaned their vigorous wings;
And many a circle, many a short essay,
Wheeled round and round, in congregation full
The figured flight ascends, and riding high
The aerial billows, mixes with the clouds.

In order that birds may fly with ease, and continue long on the wing, they must fly against the wind, and patiently do they wait for a favourable time in this respect. The sudden change of the wind will sometimes cause numbers of quails, which are heavy in their flight, to be drowned in crossing the Mediterranean Sea. Yet there are certain sea-faring birds so wonderfully endowed, as to remain almost continually on the wing, and which are often found at the distance of more than a thousand miles from land. The gigantic albatross is one of these, with its enormous expanse of wing, measuring fourteen feet, or even more, from tip to tip. But the bird which surpasses all others in its power of flight is the frigate-bird, which seldom visits the land, except at the breeding season, and is never seen to swim or rest upon the waters. With such an instance of adaptation to the regions of the air, we need no longer wonder at the power by which our birds are enabled to remain so long on the wing, as to perform their periodical migration to other lands.

It has been observed that the least willow wren, and the stone curlew, generally appear amongst us during the last week in March, while the following birds are not often with us till from about the 14th to the 20th of April. The nightingale, blackcap, chimney-swallow, redstart, yellow willow-wren, grasshopper lark, martlet, and pied fly-catcher. At the end of April and beginning of May, are seen the lesser reed sparrow, cuckoo, sand-marten, great willow-wren, spotted fly-catcher, black marten, and landrail; while about the middle of May, the swift, and the goat-sucker or fern-owl, usually join the throng.

The subject of migration is one of so much interest that we would gladly engage some of our readers, as far as practicable, to notice the time of arrival, the rapidity of flight, and other circumstances connected with our migratory birds, so that from continued observation, in various quarters, we may gain as much knowledge as possible of this beautiful and wonderful part of the economy of nature.

Ye tell us a tale of the beautiful earth,
Birds that o'ersweep it in power and mirth!
Yet, through the wastes of the trackless air,
Ye have a guide, and shall *we* despair?
Ye over desert and deep have pass'd—
—So shall *we* reach our bright home at last

THE LABURNUM, (*Cytisus laburnum.*)

Laburnum, rich
In streaming gold,

Is one of those beautiful productions of Spring, anticipated by the poet, in looking forward to the season when the trees

Shall put their graceful foliage on again,
And more aspiring, and with ampler spread,
Shall boast new charms, and more than they have lost.

This graceful tree is not a native of this country, but is found in a wild state in the woods of Germany, Austria, Switzerland, Italy, &c.; while *Cytisus alpinus*, a tree very nearly resembling the laburnum, is found chiefly on the Alps of Europe. There are about thirty species of the genus *Cytisus*, all hardy papilionaceous shrubs, inhabiting temperate regions, bearing *ternate* leaves, that is, leaves growing in threes, as above represented, and, with only one exception, (*Cytisus purpureus*,) yellow flowers.

In England the laburnum is principally cultivated as an ornament to landscape and garden scenery. It is an early blossoming tree, putting forth its "golden chains" at the latter end of May or the beginning of June, and presenting, with its numerous and long branches of pendant yellow flowers, a very showy appearance. This brilliant livery does not long adorn the tree, for the lawn or parterre soon receives showers of blossoms shed from its branches, and the long seed-pods are shortly found in their places.

This tree might probably be cultivated as a timber-tree with great advantage, for its wood is exceedingly tough and elastic, and wherever very hard and compact timber is required in small pieces, it is now used as superior to most other sorts of wood. The Romans valued it next to ebony, and in some of its qualities it is even to be preferred to that wood. Its natural colour is likewise good, and by the application of lime-water it may be rendered almost black.

It does not often attain a large size in this country, and the trunk is slender in proportion to its usual height, but it is nevertheless employed for many useful purposes, being made into wedges, pulleys, pegs, knife-handles, &c. Where it is allowed to attain its full dimensions, its timber is available for cabinet work of different kinds, and besides its durability, it looks very handsome and takes a fine polish. Chairs made of it are much stronger than mahogany. Laburnum is however harder to work than the latter wood, and is of an oily consistency, which makes it doubtful whether glue would adhere to it equally well. The oil which it contains, and which never entirely dries out, makes it less liable to splinter than many other woods. It is consequently valuable for pins of blocks, and for mill-work. For pillars, bed-posts, &c., it is also excellent.

The laburnum is one of those leguminous plants which yield poisonous seeds. Children often amuse themselves with opening the long seed-pods, and stringing the small shining bean like seeds for necklaces. They are sometimes foolish enough to eat these seeds, notwithstanding their nauseous bitter taste, which one would suppose a sufficient preventative to their doing so, and many accidents have happened in consequence.

An active and most deleterious principle has been discovered in these seeds, called *Cytism* or *Cytisine*, which is described as being a bitter, brownish-yellow, neutral, uncrystallizable substance, of which small doses killed various animals, amidst vomiting and convulsions, and eight grains taken by a man in four doses brought on giddiness, violent spasms, and frequency of the pulse, lasting for two hours, and followed by exhaustion. It is said that even a garland of the flowers, if worn for some time, will occasion head-ache.

The tree is a very hardy one growing in almost any soil, but when young it is often spoiled by the gnawing of hares and rabbits, who feed on the bark in winter, when other supplies of food fail.

When it is desired to plant laburnum on a large scale, the seed-pods should be collected, and dried thoroughly in an airy loft, then threshed, and the seeds preserved in bags or boxes till spring.

February is the month for sowing the laburnum. A light, deep, and sandy soil should be chosen, and the seeds placed an inch apart, and covered three-quarters of an inch thick. The seeds are nearly sure to grow, and must not be planted thicker than this, or the young plants will lose their leaves, become mildewed, and die.

We sail the sea of life—a calm one finds,
And one a tempest, and the voyage o'er,
Death is the quiet haven of us all.

GENIUS is allied to a warm and inflammable constitution, delicacy of taste to calmness and sedateness. Hence it is common to find genius in one who is a prey to every passion; but seldom delicacy of taste. Upon a man possessed of this blessing, the moral duties, no less than the fine arts, make a deep impression, and counterbalance every irregular desire; at the same time, a temper calm and sedate is not easily moved, even by a strong temptation.—LORD KAIMES.

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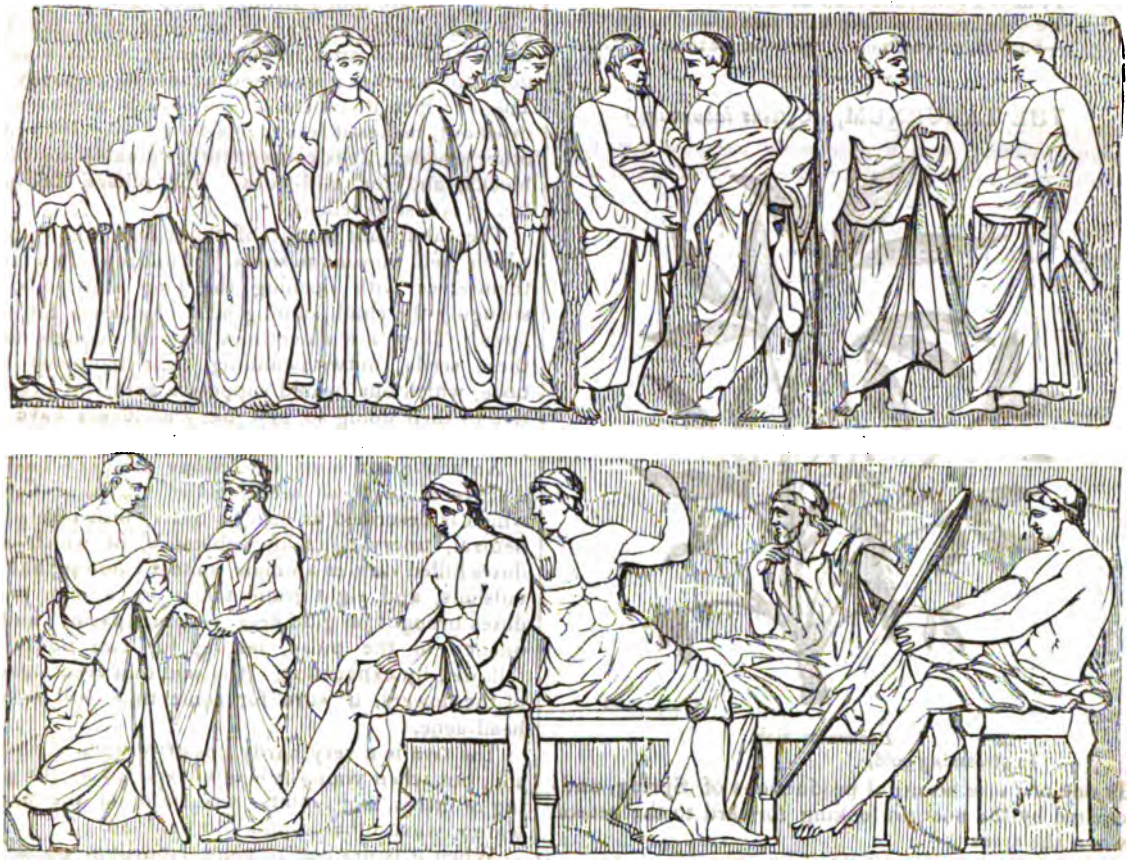


FIGURES FROM THE PANATHENAIC FRIEZE.

THE Elgin marbles consist chiefly of metopes, parts of the frieze, and statues from the tympana and pediments of the Parthenon, or temple of Minerva at Athens.

There are fifteen metopes, the subject of which is the battles between the Centaurs and the Lapithæ. The Centaurs are poetical beings, of Thessalian origin, composed of a man and a horse. The natives of Thessaly, being fond of hunting the wild bulls with which their country abounded, acquired the name of *Centauri*, or bull-goaders; but by degrees, the imagination of poets and sculptors transformed the huntsmen of Thessaly into fabulous beings with a human head, arms, and trunk, joined to the body and legs of a horse; and this perhaps because the Thessalians first, in those parts of the world, enlisted the horse into the service of man. The quarrel between the Centaurs and the Lapithæ, in the thirteenth century B.C., is said to have arisen from an insult offered by Eurytus the Centaur, to the bride of Pirithous, king of the Lapithæ, at the marriage-feast of the latter. Theseus, the friend of the king, resented the insult by throwing a large vessel full of wine at the head of the offending Centaur, which killed him. The quarrel then became general: an engagement was maintained with equal fury on both sides; but the Lapithæ finally remained victors. This contest is represented in the metopes of the Elgin collection: each metope contains two figures grouped in various attitudes: in some, the Lapithæ are victorious, and in others the Centaurs. The figure of one of the Lapithæ, lying dead and trampled upon by a Centaur, is one of the noblest productions of sculpture: another, equally remarkable, is that which represents the Centaur Eurytion attempting to carry off Hippodamia the bride: the furious galloping of the Centaur, and his shrinking from the spear hurled after him, are expressed with wonderful effect. All these metopes are in high relief; and the groups are finished with the minutest attention in every part, even in those parts which were not intended to meet the eye. They formed originally ninety-two groups, and were continued round the entablature of the Parthenon.

The frieze which was carried along the outer walls of the cella, offered a continued series of sculptures in low relief of the most exquisite beauty. The subject of this frieze is the Panathenæa, an Athenian festival in honour of Minerva, the protectress of Athens. It was first instituted by Erichthonius, and afterwards revived by Theseus, when all the Athenian people

were united into one city. At its first institution it was continued during one day only; but was afterwards prolonged for several days, and celebrated with great splendour.

There were two solemnities called *Panathenæa;* one was the GREAT Panathenæa, forming the subject of the above-mentioned frieze, and celebrated once in five years; the other was called the LESS Panathenæa, and was observed more frequently. We will first speak of the ceremonies of the latter festival, because they were repeated with greater splendour and magnificence in the former.*

In the Less Panathenæa were three games, managed by ten presidents, who were chosen from the ten tribes of Athens, and who remained in office for four years. On the first day, was a race with torches, contested by both horse and foot-men. The second contest, was a gymnastic exercise for the combatants to display their strength and manhood. The third was a musical contest, instituted by Pericles, about 440 B.C., in which patriotic subjects were proposed, such as the eulogium of Thrasybulus, who, some years after, rescued the republic from the tyrants' yoke. There was also a contest of the poets in four plays. In addition to these, was a contention, in imitation of a sea-fight; the Athenian state being for a long time mistress of the Grecian seas. The victor in any one of these games was rewarded with a vessel of oil, and a crown of olives which grew in the Academy; which was a shady grove near Athens, devoted to learning and study. There was also a dance performed by boys in armour, to the sound of the flute, representing the battle of Minerva with the Titans. No man was allowed to be present at these games in dyed garments, under a penalty, to be imposed by the president of the games. Lastly, a sumptuous sacrifice was offered, to which every Athenian borough contributed an ox; and of the flesh which remained, a public entertainment was made for the whole assembly; and at this entertainment very large drinking-cups were used.

At the Greater festival, in addition to the above rites and ceremonies enacted on a more splendid scale, there was a procession, in which was carried the sacred garment of Minerva. This procession forms the immediate subject of the Panathenaic frieze. The sacred garment was worn by a select number of virgins, under the superintendence of two virgins with white garments set off with gold. The sacred garment was also white, without sleeves, and embroidered with gold: upon it were described the achievements of Minerva against the giants; of Jupiter; of the heroes; and of men renowned for valour and high exploits; and hence it was considered to be the highest compliment that could be bestowed on a brave man, to declare him worthy of a place on the garment of Minerva. The following were the ceremonies attending the procession:—in the Ceramicus, which was a place without the city, for the burial of those who died in defence of their country, was an engine built in the form of a ship, upon which the sacred garment was hung in the manner of a sail; this engine was moved by concealed machinery, and was thus conveyed to the temple of Ceres Eleusinia, and thence to the citadel, where the garment was hung upon Minerva's statue, which was placed on a bed strewed with flowers. This procession was composed of a great concourse of people of both sexes, and of all ages and ranks. It was led by aged persons bearing olive-branches. After these came middle-aged men, armed with warlike weapons, and accompanied by the sojourners carrying little boats, as emblems of their being foreigners. Then followed the women, attended by the sojourners' wives, carrying water-pots, in token of servitude. These were followed by young men crowned with millet, who sang hymns in honour of the goddess. Next came select virgins of high rank, carrying baskets which contained sacred utensils, cakes, and the necessary articles of sacrifice. Then followed the sojourners' daughters, carrying umbrellas and folding-chairs. The rear was brought up by boys in peculiar coats used at processions.

At this solemnity, (says Robinson), it was usual to have a gaol-delivery, to present golden crowns to those who had rendered any remarkable service to the commonwealth, and to appoint rhapsodists to sing the poems of Homer. Lastly, in the sacrifices at this and other quinquennial solemnities, it was customary to pray for the Platæans, on account of the services they had rendered to the Athenians at the battle of Marathon, in which they behaved with extraordinary courage and resolution.

This battle took place, Sept. 28, 490 B.C.

Such is the busy scene which Phidias undertook to perpetuate in marble. The procession was represented as moving in two parallel columns, from west to east; one along the northern, and the other along the southern side of the temple, and after turning the two angles of the eastern front, they met at its centre. This seems to have been the most wonderful and extensive piece of sculpture ever executed in Greece. It consists of blocks of marble, three feet four inches high, and the figures represent gods, heroes, priests, basket-bearers, and bearers of libatory vessels, men, women, and children, horses, chariots, and victims; all moving in solemn procession.

It appears from the united opinions of those who are well qualified to judge, that the execution of this frieze is beyond all praise. The effect of the whole is life, animation, and activity: the costumes are very various, and the execution of the drapery is peculiarly fine. Some of the figures are completely clothed; others have naked feet; and others wear boots of different kinds: the heads of some are uncovered; others wear helmets and hats. An increased effect is added to the composition by "an apparent crowding and confusion, a variety of attitude, of dress and preparation, of precipitancy and care, of busy movement and relaxed effort, whereby," as Dodwell observes, "an animated reality is diffused throughout the subject, adding interest to every figure, and epic grandeur to the whole."

Of the horses, of which there are one hundred and ten, and no two in the same attitude, Flaxman thus speaks:—

They appear to live and move, to roll their eyes, to gallop, prance, and curvet; the veins of their faces and legs seem distended with circulation; in them are distinguished the hardness and decision of bony forms, from the elasticity of tendon and the softness of flesh. The beholder is charmed with the deer-like lightness and elegance of their make; and although the relief is not above an inch from the back ground, and they are so much smaller than nature, we can scarcely suffer reason to persuade us they are not alive.

Of this frieze, there is in the British Museum, in slabs and fragments of marble, an extent of about 249 feet; and of plaster-casts about 76 feet taken from the original slabs, which were not brought away: there is also a cast of the slab, which is in the Louvre gallery at Paris.

THE duty of the good man consists not only in forgiving, but even in a desire of benefiting, his destroyer; as the sandal-tree, in the instant of its overthrow, sheds perfume on the axe that fells it.

* Our authority for the mythic details of this article is chiefly ARCHBISHOP POTTER'S valuable work on the *Antiquities of Greece.*

ON SKILLED LABOUR.

IV.

We have pointed to procuring good apprenticeships in one or other of the many branches of skilled industry, as one of the greatest benefits that labouring parents can procure for their children; we have given some hints with respect to the means of accomplishing this often difficult object, and we proceed to show how such parents may avail themselves of the principle of co-operation in procuring that command of money, or other means, by which their boys may be apprenticed and maintained until able to maintain themselves.

Here we are met at once by the objection that the inhabitants of a country village must have a certain degree of confidence in themselves, in each other, and in Providence, before they can effectually join in any plan in which the failure of one to do his part, may derange and damage the whole. We are just come in from crossing a common, in company with a letter-press printer, who has had experience both of a London life and of one in the country, who greatly prefers the latter, who has ample facilities for joining with his neighbours in a common plan by which advantage might be taken of a cheap and easy transmission of garden and dairy produce to the London markets, and whose reply, on our suggesting such a plan to him, was at once this—that the parties could not trust each other.

Perhaps they cannot trust themselves. There are men whom an early familiarity with the alehouse, the Sunday newspaper, and the tobacco-pipe, has seduced into habits too strong for them to break, which separate them from their wives during those hours of cessation from toil, when they might be planning and executing, with their partners in weal and woe, schemes for their mutual advantage, and for the benefit of their little ones, and which totally unfit them for any course of steady and strenuous endeavour of which the reward is placed in a distant future. It is quite as natural for the slaves of such habits to laugh at the plans we are about to describe, as it was for those who have actually executed them, (for we describe what we have seen,) first to purpose calmly and firmly, and then steadily to effect what they have thus purposed; never deterred by any obstacles and hindrances, because never doubting that no obstacle or hindrance can reverse God's promises, or that God will ultimately bless a parent's prayerful endeavours, though it may not be at the time or in the manner they may expect.

The slaves of low habits never certainly can be safely trusted by others, since they cannot trust themselves. And thus we find ourselves thrown back at every step, on the great principles with which we started; namely that "the fear of God is the beginning of wisdom," and that amid all the individual cases in which Providence permits wickedness to thrive in this world, still, as a general fact, the temporal welfare of men, families, communities, and kingdoms, rests on very much the same foundations with the Christian character as described in Holy Writ—on faith, virtue, temperance, patience, godliness, brotherliness, and charity. Indeed, where these qualities abound, they diffuse their happy effects on persons who do not themselves really possess them. Example and habit influence these, and thus sobriety, prudence, and intelligence, become the virtues of a whole neighbourhood. The population of the place I refer to is variously composed. Some are common labourers, some hand-loom weavers, often earning less by the loom, than the labourer with his spade and mattock; others are country tailors, shoemakers, &c. Yet they almost all take part in the system about to be described, and in so far as we could observe, all were more or less benefited by it, excepting some, who had made what we call their *extra-professional* an excuse for neglecting their *regular* employments, and having gradually become speculators in bargains, had acquired a taste for settling those bargains over strong drink. Such persons, I have no doubt, would, under any circumstances, have become busy-bodies and tipplers, but in the instance before us, by gradually losing character, they gradually lost with it the advantage of co-operation with others, by simply ceasing to be trusted.

The spot I allude to was too distant from any considerable market to admit of market-garden stuffs being profitable. But it was not so for butter, eggs, fowls, and bacon; and to the producing of these and a little lint each family seemed to confine itself.

The proprietors of the adjoining estates offered nothing whatever in the shape of bounties—no allotments, either gratis, or at reduced rents, but, on the contrary, the land, from excessive competition, appeared to us to be in many instances let too high. Yet the sober and industrious almost uniformly throve, and the place has sent out not a few youths who have risen from comparative poverty to handsome incomes, in the places of their ultimate destination. One such youth, dying childless, after realising a large fortune in one of our colonies, left a part of it to his native parish for educational purposes, and the results are one flourishing classical academy and three or four district schools, so that there is not perhaps a parish in Britain so well provided for in that respect.

The families who keep cows feed them from three or four distinct sources. Attached to their houses, each generally has a small garden; in addition to that, they have often, on a lease of from five to twelve years, a patch of ground, which they cultivate with the spade, to which they carry, in wheel-barrows, the manure of their pig-sties and cow-houses, and from which they derive a considerable part of the winter and spring food of their cows, and a little corn. They are bound by their landlords to cultivate these spots, however small, in such a manner that the soil shall never be exhausted.

As the parish has no common, and indeed no ordinary common would suffice for all the cows, this difficulty is met by a very simple plan, in which the co-operation we refer to is indispensable. The neighbouring proprietors, from a regard partly for beauty, partly for interest, keep fields and meadows of various sizes in pasture, and let them for the season, in spring, by public auction, with an obligation not to over-pasture them, either by admitting an excessive number of animals, or by allowing them to remain too long after the close of the season. We shall suppose a field of ten acres is put up. The bidders are so many knots of the inhabitants, who design it for their cows. One company, as they are called, authorizes their spokesman to bid so much, another so much more, until at length it is knocked down to the highest bidder. When the auction is over, the parties give bills, or promissory notes, binding themselves, jointly and severally, to pay the rent at which the fields were respectively knocked down to them at the close of the season—say at Christmas; and then they agree among themselves as to the pasturing of their cows.

But it may be said, among poor people, how can there be so much mutual confidence? What should

one of a company lose his cow—who then is to pay his proportion of the rent? This is met either by loans, made up among his friends and neighbours, or by the parties assuring each other against such losses. Thus, ten of a company may each, by contributing a guinea, provide a fund sufficient to replace one out of ten cows dying, with a ten-guinea cow.

Co-operation is required, also, in disposing of produce. At the place I refer to, the carts which bring out the cotton and silk yarns, and take back the webs, form a carrying system, which includes the transport of produce from country to town, and the reverse. Carts, in fact, go from house to house over night, or at a very early hour, collecting butter, eggs, fowls, &c., for market, and return with sugar, tea, and various articles, to be purchased to advantage only in large towns.

Thus we have a system that has stood the test of many long years, and which produces more positive good than all the fine theories of your philosophers. I need not say that the men and women who form it are old-fashioned Christians and good subjects—not either Owenites or chartists.

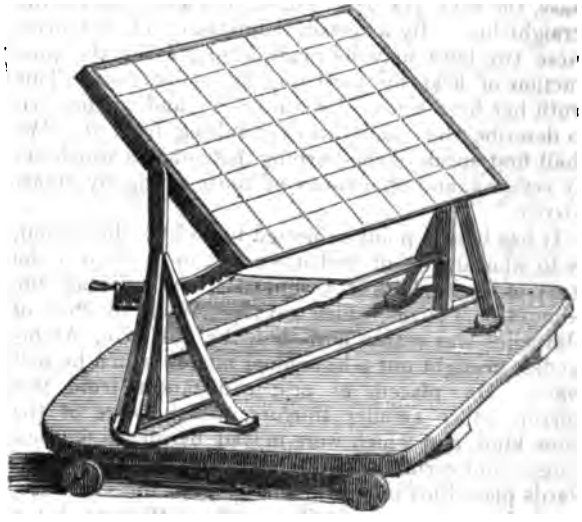
As it may be surmised that labourers and artisans, who thus involve themselves in keeping cows and so forth, cannot possibly do justice to their employers, we may add that no such objections exist on the spot. Nay, to judge by one, and that the most numerous class, the hand-loom weavers, we must infer the very reverse, as the following fact will show. In the winter of 1825-6, that branch of industry was particularly depressed, so much so that hardly a single loom was employed in the place; but such was the high repute of its cotton weavers for careful execution of their orders and honesty, that silk yarns were sent out to them in the spring of 1826, first cautiously, and by way of experiment, but soon after regularly, and to a large amount, *in consequence of the success of the experiment.*

We dare not say that the inhabitants are exempt from many defects. We believe that they would not themselves have originated the system of frugal industry, which they inherit from forefathers who were, according to their own confessions, much their superiors, both in religious knowledge and in practical christianity. During the high prices that were paid for weaving, from the end of the last century down to the close of the war, many of the inhabitants grew giddy from sudden wealth. Some became speculators, and were made reckless by the failure of their schemes; others fell into drinking habits, retaining the form of godliness without its power. We hope that, as a body, they are improving; but our present purpose in introducing them into these pages is to produce a practical illustration, the permanent result of long experience, not the forced and solitary fruit of some philanthropic projeet of yesterday—to which we can point in proof of the extent of resources which Divine Providence has placed within the reach of poor labouring families, in our rural districts, who desire to give their sons a skilled education, but are deterred, and thrown back in despair, because they think the means utterly beyond their attainment. H.

SORROWS like showers descend, and as the heart
For them prepares, they good or ill impart;
Some on the mind, as on the ocean rain,
Fall and disturb, but soon are lost again;
Some, as to fertile lands, a boon bestow,
And seeds, that else had perished, live and grow;
Some fall on barren soil, and thence proceed
The idle blossom, and the useless weed.—CRABBE.

ON BURNING GLASSES.

I.



BUFFON'S BURNING MIRRORS.

WERE we not to pay close attention to the principles by which the phenomena are produced, few things would appear more strange than the apparent production of fire, by means of what are called *burning glasses*, or *burning instruments*. If we remove the object glass from a telescope, or an opera glass, and hold it up between the sun and the hand, a little adjustment will enable the sun's rays to pass through the glass in such a manner as to produce an insupportable degree of heat: this property, as well as a somewhat similar one, arising from solar rays reflected from a concave surface, have given rise to the production of many remarkable burning instruments, which are well worthy of our notice.

In order to produce such an effect by means of a transparent lens, through which the solar rays may pass, it is necessary that one or both surfaces of the lens be *convex*. The effect of a convex lens is, that those rays of light which were parallel before they fall upon the lens, are made to *converge* on leaving the lens, that is, they are all gradually collected into one point. The effect of this is, that all the light forming the millions of rays which enter the glass is congregated in one little space, and produces an intense illumination. But this is not all. We do not know the real nature of solar light, but we know that *heat* is always combined with it; and whenever the luminous effect of rays of light is congregated or focalized in one spot, the heating effects are so likewise. We therefore find that whatever arrangement will concentrate solar rays into one spot, will at the same time concentrate the solar heat. We need not here speak of the refined experiments by which the heating rays are separable from the luminous rays, for in all common experiments they are combined.

Now there are two ways in which solar rays can be converged to a focus; first, by reflexion from a concave surface; second, by transmission through a convex surface: in the first case, the reflecting body is opaque, with one of its surfaces concave, and highly polished: in the other case, the transmitting body is transparent, like glass, for instance, with one or both of its surfaces convex. If the reflecting body be convex, or the transmitting body concave, the rays of light would diverge instead of converge. The effect of focalization of light, under the circumstances which we have detailed, depends on two optical laws, viz., that when rays of light are reflected from a polished surface, the

angle of reflexion is just equal to the angle of incidence; and that when light passes out of a rare medium, such as air, into a denser medium, such as glass, the rays are deflected, or refracted out of the straight line. By a certain adjustment of distances, these two laws may be made available for the production of heat by focalizing the solar rays. This truth has been known for centuries; and we proceed to describe the contrivances resulting from it. We shall first speak of the burning instruments which act by *reflexion*, and afterwards of those acting by *transmission*.

It has been a point subjected to no little discussion, as to what degree of credence ought to be given to the story of the exploits of Archimedes. We will take the account of Tzetzes, which says:—"When the fleet of Marcellus was within bow-shot, the old man, Archimedes, brought out a hexagonal mirror which he had made. He placed, at proper distances from this mirror, other smaller mirrors, which were of the same kind, and which were moved by means of their hinges, and certain square plates of metal. He afterwards placed his mirror in the midst of the solar rays, precisely at noon day. The rays of the sun being reflected by this mirror, he kindled a dreadful fire in the ships, which were reduced to ashes, at a distance equal to that of a bow-shot." This passage relates to the burning of a Roman fleet, which was besieging the city where Archimedes was. The marvellous results detailed have induced many commentators to think that the whole affair should be ranked among the fables of antiquity; but Sir David Brewster (*Edinburgh Cyclopædia*,) considers, that if we suppose Archimedes to have employed a combination of plain mirrors, and if we make some allowance for the exaggeration of ancient authors, there seems reason to believe that some such effect as that described was within the bounds of probability. Six or seven of the Latin authors contain descriptions, more or less full, of this exploit, and although we can easily suspect them of exaggeration, yet it is not likely that the whole affair is falsely reported.

We will now pass from Archimedes to Anthemius, an architect in the employ of the Emperor Justinian. This ingenious man wrote a treatise on machines and mechanical contrivances, in which he details the mode by which he conceives a powerful burning apparatus may be constructed. He directs that a hexagonal plane-mirror may be taken, and around this other hexagonal mirrors are to be placed, not in the same plane as the first, but inclined to it. The rows of mirrors, as they recede from the central one, are to be inclined more and more from it, and every mirror is to be joined edgewise to those around it: the effect of this he says would be, that all the light reflected from all the mirrors, would be focalized at one spot. He seems, in fact, to have well understood the properties of a parabolic reflector, for such appears to have been the form of the instrument described. The difference between such a reflector, and the parabolic reflector of our own day is, that in the latter the reflecting surface is one continuous curve, while in the former it was a curve made up of a number of little planes.

Mechanical contrivances met with very little encouragement during the dark ages of European history; but about two or three centuries ago attention seems to have been again directed to the construction of burning instruments. Leonald Digges, in 1571, published a work, called *Pantometria*, in which, after speaking of the exploits of Archimedes, he says:—"Some have fondly imagined that Archimedes burned the Roman navie with a portion of a section parabolical, artificiallye made to reflect and unite the sunne beames a great distance off; and for the construction of this glass toke great peines, with high curiositie, to write large and many intricate demonstrations; but it is a mere fantasie, and utterlie impossible, with any one glass, whatsoeuer it be, to fire anything only one thousand pace off, no, though it were an hundred foot ouer, marry true it is the parabola, for his small distance most perfectly doth unite beames, and most vehemently burneth of all other reflecting glasses." He expresses an opinion, however, that by a combination of several glasses into a parabolic form, the effect might be produced.

A few years after this publication Baron Napier, of Merchiston, gave an indistinct intimation of a burning glass which he had devised, but not sufficiently explicit to let us know the nature of it.

The next author who we have to name is Kircher, a man of an indefatigable turn of mind in the pursuit of science. He was led to an investigation of the properties of burning glasses, by a wish to determine the probable truth of the prevalent story concerning Archimedes. He performed many experiments: first, he combined a number of parabolic reflectors; then he arranged a number of flat circular mirrors against a wall, inclined at such angles to one another, that the reflected rays from all were combined in one spot: and afterwards, he made numerous experiments with five plane reflectors, fixed in a frame, and so inclined as to focalize the reflected rays at the distance of a hundred feet: he tested the heat produced by one, two, three, four, and five mirrors successively, and noted their comparative effects: he even went to Syracuse, to endeavour to determine the position and distance of the Roman fleet, with respect to Archimedes' burning apparatus.

During the seventeenth century, M. Vilette, a French artist at Lyons, constructed several large burning mirrors. These mirrors seem to have differed considerably from those before alluded to, for each mirror consisted of a single concave surface. They were made of a composition, of which copper and tin were two of the ingredients, and the reflexion had something of a yellow cast. One of these mirrors was as large as forty-seven inches in diameter, with a focal length of thirty-eight inches. One of them was exhibited before the king of France, in 1670, at St. Germain, and the results of the experiments were very remarkable.

A small piece of pot-iron was melted in	40	seconds.
A silver piece of fifteen pence was pierced in	24	"
A thick nail was melted in	30	"
The end of a sword blade burnt in	43	"
A brass counter was pierced in	6	"
A piece of red copper was melted in	42	"
A piece of chamber quarry-stone vitrified in	45	"
Watch-spring steel melted in	9	"
A mineral stone calcined and vitrified in	1	"
Green wood and other bodies took fire instantly.		

Another mirror melted a small silver coin in seven seconds and a half, and various other metals in times varying from three to thirty seconds.

In 1685 M. de la Garouste presented to the Academy of Sciences a polished reflector of five feet in diameter. This instrument was said to produce very powerful effects, but the nature of it has not been detailed.

The next instrument we have to describe, was constructed by Tschirnhausen, and was of well polished copper, nearly five feet in diameter. Among the effects produced by it, were the following:—A piece of wood, held in the focus, flamed instantly; water, applied in an earthen vessel, boiled immediately: a piece of tin, three inches thick, melted in drops as

soon as it was put in the focus: a plate of iron or steel became instantly red-hot, and a hole was soon afterwards burned through it: copper and silver melted in five or six minutes: slate, tile, pumice, crucible, and bone, were speedily converted into a kind of enamel, differing in opacity and in colour.

The greatest improver of these contrivances was the celebrated Buffon, who made very diversified experiments on the best mode of focalizing heat. He found that silvered glass reflected light more powerfully than polished metals; and he investigated the extent to which the heat is dispersed by passing through the air. When he had made many preliminary experiments, he proceeded to construct the burning apparatus represented in our cut. He took a great number (at first 168,) of pieces of silvered glass, six inches by eight, and mounted them in an iron frame, each glass being so fitted up with screws and springs that a motion could be given to it in any direction, so that the image reflected from all the plates might be easily thrown upon the same spot; and the whole frame, by means of the toothed arm seen below it, could be placed at an angle depending on the sun's altitude. The peculiarity of this mirror consisted in the long distance to which its effects extended: in most of the instances already detailed the focus was only four or five feet from the mirror, but Buffon's experiments will show how far otherwise it was with his apparatus.

March 23, 1747.—Buffon set on fire, at a distance of 66 feet, a plank of tarred beech wood, with 40 mirrors only, although the machine happened to be disadvantageously placed. On the same day a tarred plank was set on fire, at a distance of 126 feet, with 98 mirrors. April 3.—By a pale evening sun a slight inflammation was produced upon a plank covered with wool cut into small pieces, at the distance of 138 feet, with 112 mirrors. April 4.—When the sun was rather obscure, 154 mirrors, at the distance of 150 feet, made a tarred plank smoke profusely in two minutes. April 5.—154 mirrors, at a distance of 250 feet inflamed chips of fir deal, sulphured and mixed with charcoal: when the sun was bright, the inflammation took place in a few seconds. April 10.—128 mirrors, at a distance of 150 feet, set fire to a tarred plank of fir. April 11.—12 mirrors at the distance of 20 feet inflamed small combustible matters: 21 mirrors inflamed a plank of beech: 45 mirrors melted a large pewter flask, weighing about six pounds: 117 mirrors melted some thin pieces of silver, and made a piece of sheet-iron red-hot: the distance of 20 feet was maintained throughout these four experiments.

The result of Buffon's experiments led him to believe that he could melt metals as easily at 50 feet distance as at 20. He also considered that a distance of about 40 or 45 feet was the most advantageous for experimenting on the metals. In subsequent experiments Buffon ignited wood at a distance of 200, and even 210 feet, when the sun was shining brilliantly; and he melted nearly all the metals and metallic minerals at a distance varying from 25 to 40 feet. The apparatus required about half an hour to bring all the mirrors to focalize in one spot.

In another paper we shall speak of some subsequent contrivances by Buffon, and also of some made in later times; after which we shall speak of those which act by the transmission, instead of the reflexion, of solar rays.

BE moderate in thy desires of what thou hast not; and moderate in the use of what thou hast.—BISHOP PATRICK.

TO GOD.

FOR thee, for thee, my lyre I string,
Who, by ten thousand worlds attended,
Holdest thy course sublime and splendid
Through heaven's immeasurable ring;
I tremble 'neath thy blazing throne,
Thy light eternal built upon,—
Thy throne, as Thou, all radiant, bearing
Love's day-beams of benignity!
Yet terrible is thine appearing
To them who fear not thee.

O what is mortal man, that he
May hear thy heavenly temple ringing,
With songs that heaven's own choirs are singing,
And echo back the melody?
My soul is wandering from its place;
Mine eyes are lost amidst the space
Where thousand suns are rolled through heaven,—
Suns waked by Thee from chaos' sleep;
But with the thought my soul is driven
Down to a trackless deep.

There was a moment ere Thy plan
Poured out Time's stream of mortal glory;
Ere Thy high wisdom tracked the story
Of all the years since time began,
Bringing sweet peace from sorrow's mine,
And making misery discipline;
The bitter waters of affliction
Distilling into dews of peace,
And kindling heavenly benediction
From earth's severe distress.

Then did thine Omnipresent eye,
Earth's million million wonders seeing,
Track through the misty maze of being
E'en my obscurest destiny.
I, in those marvellous plans, though yet
Unborn, had mine own portion set,
And Thou hadst marked my path, though lowly;
E'en to my meanness Thou didst give
Thy spirit—Thou—so high—so holy
And I, thy creature, live.

So, through this trembling ball of clay,
Thou to and fro dost kindly lead me;
Midst life's vicissitudes I speed me,
And quiet peace attends my way.
And, O, what bliss it is to be,
Though but an atom, formed by Thee;
By Thee, who, in thy mercy, pourest
Rivers of grace, to whom, indeed,
The eternal oak-trees of the forest
Are as the mustard seed.

Up, then, my spirit! soar above
This vale where mists of darkness gather,
Up to the high eternal Father,
For thou wert fashioned by his love.
Up to the heavens! away! away!
No! bend thee down to dust and clay;
Heaven's dazzling light will blind and burn thee;
Thou canst not bear the awful blaze.
No! wouldest thou find the Godhead, turn thee
On nature's face to gaze.

There, in its every feature, thou
Mayest read the Almighty; every feature
That's spread upon the face of nature
Is brightened with His holy glow;
The rushing of the waterfall,
The deep green valley,—silent all;
The waving grain, the roaring ocean,
The woodland's wandering melody,
All—all that wakes the soul's emotion,
Creator! speaks of Thee.

But of thy works through sea and land,
Or the wide fields of ether wending,
In man Thy noblest thoughts are blending:
Man is the glory of thy hand!
Man, modelled in a form of grace,
Where every beauty has its place;
A gentleness and glory sharing
His spirit, where we may behold
A higher aim, a noble daring,—
'Tis thine immortal mould.

O wisdom! O unbounded might!
I lose me in the light Elysian;
Mine eye is dark, and dimmed my vision:
Who am I in this gloomy night!
Eternal Being! let the ray
Of thy high wisdom, bear away
My thoughts to thine abode sublimest;
But how shall grovelling passions rise
To the proud temple where thou climbest,
The threshold of the skies!

Enough, if I a stammering hymn,
My God! to Thee, may sing, unworthy
Of those sweet strains poured out before Thee
By heavenly hosts of Cherubim.
Despise me not,—one spark confer,
Worthy of thy own worshipper;
And better songs, and worthier praises;
Shall hallow Thee, when, midst the strain
Of saints, my voice its chorus raises,
Never to sink again.

[From the Dutch.]

THE COMMON YEW,

(*Taxus baccata.*)

The common yew is the only tree belonging to the subdivision of coniferous vegetables called *Taxinæ*, which is a native of Britain. It is generally distributed throughout the northern parts of Europe, and is also a native of North America, and of the Japan isles. It was much more abundant in England and Ireland some centuries ago than it is at the present time. In the latter country great quantities of yew are found imbedded in the earth. We also find, from the mention made of it by Cæsar, that it was very plentiful in Gaul, at the time of his invasion of that country.

The yew is a very slow-growing tree, especially in mountainous situations: it is mostly seen at a distance from other trees, and is rarely found in forests, or even in large groups of trees; for though the baneful properties of the yew have been much exaggerated, it is still true that other trees do not thrive well in its immediate vicinity.

The foliage of the yew is of a peculiarly dark and sombre green, and the branching habit of the tree gives it a breadth and density of shade that well accord with the situation which, in this country, it mostly occupies, *i.e.* the village churchyard. The gloomy appearance of the tree seems to have constituted it the emblem of mourning in all nations, and the extremely lasting nature of its timber, as affording a faint type of immortality, was probably the cause of its being planted in churchyards by our forefathers. The leaves of the yew grow very thickly along the twigs in opposite rows, and are of a linear shape; the cones, or berries, are small and numerous, and when ripe the seed is found enclosed in a soft pulp of a bright red colour and very sweet taste. This pulp was formerly supposed to possess most deleterious properties, but has now been proved to be perfectly innocuous; the narcotic principle being confined to the leaves. Instances have been cited of the fatal effects of the chippings from these trees when eaten by horses and cows. It is likewise thought that bee-hives placed near a yew-tree will not prosper.

When this tree occupies a moist and shaded situation in a rich soil, it grows at a quicker rate than is its usual habit, but it is not bettered by the change. The timber is neither so heavy nor compact as usual, and very frequently the tree, while increasing in diameter, becomes hollow in the centre, and does not contain more wood than one of a smaller growth, at the same time that the quality of the timber is very inferior. This tree never attains any great height, but sometimes exhibits in the protuberances of its trunk and branches a very curious appearance. These fantastic forms, as they are sometimes exhibited in nature, are by no means displeasing to the eye, but the barbarous attempts at improvement on nature, formerly so much in fashion, are extremely offensive to a correct taste. The Romans were perhaps the means of introducing this custom among us, for we are told by Pliny that they were fond of cutting their evergreens into the shapes of birds and beasts: however this may be, the custom was prevalent in this country for several centuries, and even now we are too often annoyed by goodly trees of yew, cypress, or box, deformed and deprived of all their natural beauty by the attempt of their owners, to conform them to their own ideas of graceful proportions. Pyramids, obelisks, and various uncouth figures of birds and beasts of yew, still decorate gardens and courtyards in the country, and excite the amusement of the passenger, while in some places we still see vestiges of the tall impenetrable hedges formed of these trees in ancient times, and kept in their stiff wall-like forms by repeated and diligent shearing. Gilpin notices this strange practice. In speaking of the yew, he says:—

As to its picturesque perfections,—I profess myself (contrary, I suppose, to general opinion) a great admirer of its form and foliage. The yew is, of all other trees, the most *tonsile;* hence all the indignities it suffers. We everywhere see it cut and metamorphosed into such a variety of deformities, that we are hardly brought to conceive it has a natural shape, or the power which other trees have, of hanging carelessly, or negligently. Yet it has this power in a very eminent degree; and in a state of nature, except in exposed situations, is perhaps one of the most beautiful evergreens we have. Indeed, I know not whether, all things considered, it is not superior to the cedar of Lebanon itself—I mean to such meagre representations of that noble plant as we have in England. The same soil which cramps the cedar is congenial to the yew.

The large use made of the wood of the yew in former days for military purposes, occasioned the supply of native timber to be insufficient; great quantities were therefore imported from other lands, and the long bow which every Englishman was obliged to have, of a height equal to his own stature, was formed most commonly of yew. Its toughness and elasticity admirably fitted it for this purpose. Spenser speaks of

The eugh, obedient to the bender's will.

There is much resistance, however, to be overcome in bending a bow made of yew, and the use of the long bow in ancient times must have required an extraordinary degree of strength and skill. It was the proud boast of the yeoman that none but an Englishman could bend that powerful weapon.

The propagation of the tree, which is by seed, has now fallen into neglect; but should the application of its extremely hard and solid wood to the purposes of machinery be added to its present use as an ornamental wood, or should the practice of archery become again universally prevalent, we may expect to see its cultivation better attended to.

Their beauteous veins, the yew
And phyllerea lend, to surface o'er
The cabinet.

The wood is at present valued by the cabinet-maker and the inlayer, on account of its beautiful red veins: for works of strength and durability it is also a good material, such as axles, cogs for wheels, flood-gates for fish-ponds, &c.

The specimens of ancient yew-trees are becoming more and more rare. Evelyn speaks of several that

had attained a remarkable size and age. The Crowhurst yew was thirty feet in circumference: a yew in the churchyard of Braburne in Kent was nearly twenty feet in diameter, and Evelyn observes that at Sutton, near Winchester, there was "*such another monster.*" An interesting notice of the ancient yew-tree in Dibden churchyard, Hampshire, destroyed by the violent storm in November, 1836, will be found in the *Saturday Magazine*, Vol. X., p. 47, and different opinions respecting the origin of the custom of planting these trees in churchyards are stated in Vol. I., p. 74. Pennant mentions a yew, in a churchyard in the Highlands, which measured fifty-six feet and a half in circumference. In Wales and Ireland twigs of yew-tree are often carried at funerals.

THE COMMON YEW, (*Taxus baccata.*)

BOTANICAL GARDEN AT KEW.

THIS is situated on the south side of Kew Green, having the walls of the royal forcing and kitchen garden, and the pleasure-ground of Kew Palace for its boundaries. It occupies fifteen acres, of which part is devoted to the culture of shrubs and trees: the remainder is taken up with stoves and greenhouses, ten in number, borders of herbaceous plants, open spaces for receiving greenhouse plants in summer, &c. One stove or house, called the Palm Stove, sixty feet long, contains some fine old palm trees among other specimens: a second, forty feet long, has small New Holland and Cape plants in it: a third contains magnificent specimens from New Holland, and other countries: it is 110 feet long, and called the "Botany Bay House." There is a fourth of the same length, said to be the first erected in the garden, which contains noble specimens of succulent and other plants. In general, the plants, especially those from New Holland, are in excellent health, clean, and well attended to; and the general appearance of the collections very creditable.

In the pleasure-ground is a fine old orangery, 130 feet long, filled with orange trees, araucatias, New Holland, and other plants, many of which are of great size. In another part of the ground there has recently been erected an architectural greenhouse, eighty-two feet long, forty-two wide, and twenty-eight high.

This garden has always been maintained as the great botanical garden of the country; yet, under the present defective system pursued in it, it has never been nearly so effective, as a garden of science and instruction, as it might have been rendered.

Visitors are unreservedly admitted to the garden daily, except on Sundays; a privilege which has, however, as yet afforded no other advantage to the public beyond a pleasant lounge, or at least next to no other. Great quantities of flower and other plants have been supplied from it to the conservatories, &c., of Windsor Castle, and to the royal palaces on birth-days, birth-nights, and other grand entertainments. It was originally formed at the private expense of the royal family, and has, up to the present time, been maintained as part of the household establishments, the estimate of the expenses being regulated and defrayed by the Lord Steward and the Board of Green Cloth. Unconnected, however, as it is with any of the palaces now occupied as royal residences, it has become a mere magazine of materials, valuable only, and very valuable, as a means to stock the other royal gardens.

The cost of repairs, &c., is defrayed at the public expense, out of the revenues of the Commissioners of Woods and Forests; and this cost amounted in 1834 to 981*l.* 6*s.*: in 1835 to 1646*l.* 4*s.* 8*d.*: in 1836 to 5065*l.* 2*s.* 4*d.*: and in 1837 to 449*l.*: making a total in these four years of 8141*l.* 13*s.*

It is proposed that the garden should now be given up for national purposes; there being no botanical institution near London, but a small one at Chelsea, supported by a private corporation, the Society of Apothecaries, who have no funds adequate to maintain such a botanical garden as the wants of science would now seem to demand. The present establishment at Kew would form an admirable foundation, and no better site for it could be found in the vicinity of the metropolis. To make it effective, at least thirty acres from the pleasure-gardens would require to be added, and extensive establishments and arrangements should be made, so as to adapt it perfectly to the three branches of instruction, exhibition, and supply. With respect to the latter, it might be made the great source of new and valuable plants to be introduced and dispersed throughout the country, the centre of authentic and official information upon points connected with the establishment of new colonies, the public nursery for the propagation of plants in our foreign possessions, &c. It is also proposed that the department attached to such a national garden should possess the control over the gardens in the British colonies and dependencies, such as those in Calcutta, Bombay, Saharunpur, the Isle of France, and Trinidad, which cost many thousands a year, and whose utility is much diminished by the want of some system under which they can all be regulated and controlled.

To render such an establishment perfectly effective would certainly not cost more than 20,000*l.*, and 4000*l.* a year afterwards for its maintenance, besides repairs.

[Compiled from an Official Report by Dr. Lindley.]

LEARN from yon orient shell to love thy foe,
And store with pearls the hand that brings thee woe;
Free like yon rock from base vindictive pride,
Imblaze with gems the wrist that rends thy side.
Mark where yon tree rewards the stony shower,
With fruit nectareous, or the balmy flower:
All nature cries aloud,—"Shall man do less
Than heal the smiter, and the railer bless?"

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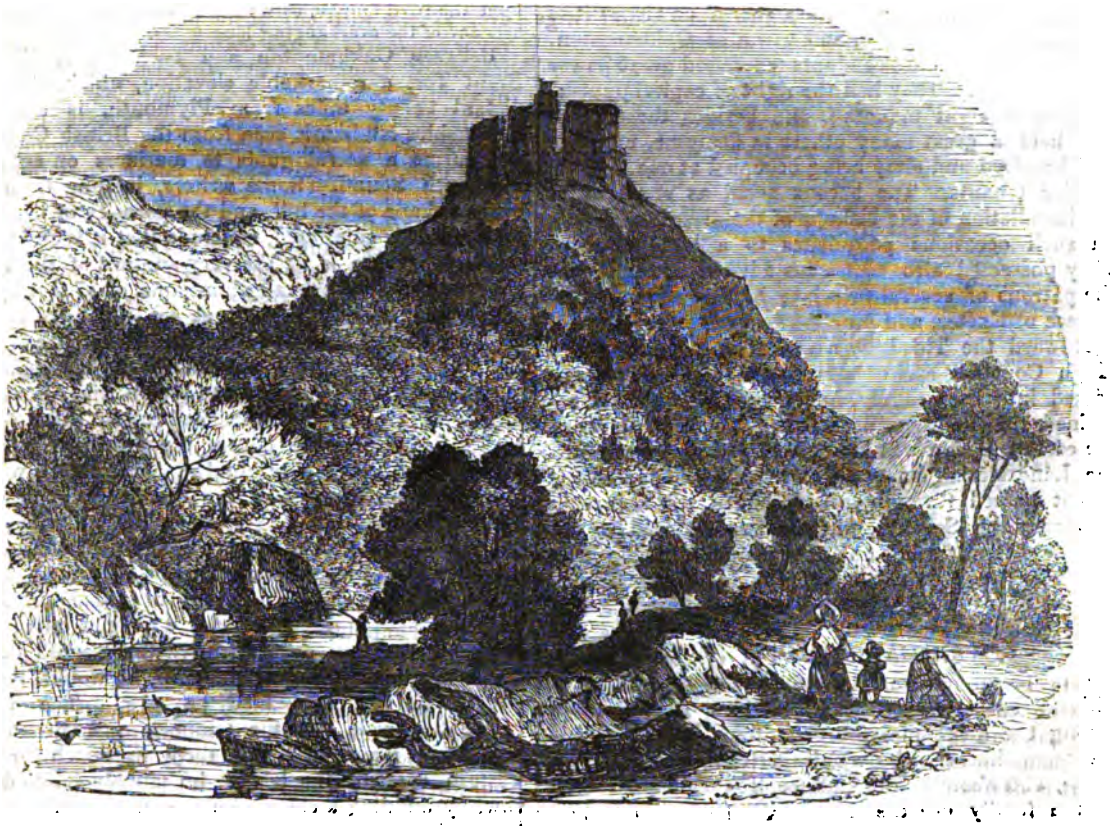
OAKHAMPTON CASTLE.



OAKHAMPTON is the name of a deanery in Devonshire, as well as of a town and a castle situated in it. The deanery contains, besides the town, three small villages or hamlets, named Chissacot, Meldon, and Kigbear.

The town of Oakhampton is surrounded on every side by hills, and derives its chief importance from being in the high road from Exeter to Cornwall: it is situated at about twenty-two miles from Exeter and two hundred from London. The neighbouring forest of Dartmoor affords pasturage to numerous flocks of sheep, the flesh of which is said, from the sweetness of the herbage, to be of superior quality; in consequence of which, great numbers of the sheep are sent to the London market. There is a weekly market at Oakhampton on Saturdays, at which corn, meat, poultry, fish, &c., are abundantly supplied. Oakhampton was one of the first towns that sent members to parliament. It acquired that privilege in the reign of Edward the First: the privilege was exerted in the seventh of Edward the Second: but from that period it appears to have remained in abeyance till 1640, when it was again resumed, and continued until the time of the Reform Bill. The right of election was vested in the freemen and proprietors of freeholds within the borough, about two hundred in number: Oakhampton was, however, one of the boroughs disfranchised by the Reform Act. Before the changes in municipal government, Oakhampton was governed by a mayor, recorder, justice, five principal burgesses, and eight assistants, aided by a town clerk and other officers. The mayor was chosen, on the first Monday after Michaelmas day, by the entire body, from two principal burgesses nominated by the late mayor. The principal burgesses were eight in number; the mayor, the late mayor, and the town clerk included. The freedom was acquired by birth and servitude; the eldest son alone becoming free at his father's death, though not unless born within the borough. But certain changes were made in these matters, by the Municipal Corporations Reform Act.

The living of Oakhampton is a vicarage, in the archdeaconry of Totness, and diocese of Exeter, rated in the king's books at 20*l.*, and in the patronage of the lord of the manor. The church is situated about half a mile from the town: it is an ancient edifice, with a handsome square tower, surmounted with pinnacles, and having north and south porches. There is, besides this, a little chapel called St. James's chapel, belonging to the corporation, and chiefly employed for the performance of divine service during the sessions, and occasionally in Lent.

Oakhampton derives an historical importance from

the circumstance of its having been the head of the Earldom of Devon, and the seat of the hereditary county sheriffs, keepers of the castle of Exeter. The castle, the ruins of which are represented in our frontispiece, was existing longer ago than we have any records of the town. William the Conqueror gave the barony to one of his faithful followers, Baldwin de Brionüs, who had greatly aided him at the battle of Hastings; and it is stated by some writers that Baldwin then built Oakhampton castle on his newly acquired estate; while others think that it existed before the arrival of William in England. Be this as it may, the castle became the residence of Baldwin, and he was created hereditary sheriff or viscount of Denshire or Devonshire, and baron of Oakhampton. Baldwin and his descendants exercised great power in the barony. They had the right of capital punishment over eight manors; and besides these eight, they held a great many others in demesne, upwards of a hundred and sixty being occupied at one time by inferior tenants. The barons acted as stewards at the installation of the bishops of the diocese, claiming on such occasions perquisites to a large amount. They possessed also numerous advowsons, and were the patrons of several priories; holding three fees of the see of Exeter, and ninety-two by knight's service. Edward the Third, by a stretch of power, created Hugh Courtney earl of Devonshire, and the barony passed into that family, in whose possession it remained till the reign of Edward the Fourth, when the earl of Devon was beheaded for taking part with the Lancasterian party against the Yorkists. After this it passed through various hands till the reign of Henry the Seventh, when it was restored to the Courtney family; but one of the branch having been accused of carrying on a treasonable correspondence against the crown, the park of Oakhampton was laid waste, and the castle reduced to ruin. The barony became extinct during the reign of Queen Mary, by the death of Edward Courtney, earl of Devon, without issue, when the possessions were divided among the descendants of the four sisters of his great-grandfather; by which division, Oakhampton castle, with about half the manor, became the property of the family of the Mohuns. During the last century, the entire manor became the property of Lord Clive, celebrated for his connexion with India. It was afterwards possessed by the Prince of Wales; and has since passed into private hands.

The ruins of the castle occupy the summit and declivity of a conoidal mount or eminence, now so thickly clothed with trees, that although the ruins are of great extent, only a very small proportion of them are visible from the high road. The high road from Exeter to Launceston is nearly on a level with the top of the mount, and the mount is skirted on one side by the western branch of the river Ock. In approaching from the south, the mouldering and ivy covered ruins present a peculiarly picturesque appearance, from their combination with the surrounding well wooded scenery. The ivy with which the lower part of the ruins is covered gives all that peculiar beauty which an old building, thus enveloped, is calculated to possess. In allusion to the effect of the ivy on these ruins, Mr. Williams, in his *Picturesque Excursions in Devon*, observes:—

"The ornaments of nature, in the decorations of ruins, are so tasteful, so pleasingly wild, and so harmonized, that nothing from human ingenuity can be added for their improvement. "The long grass that o'ertops the mouldering wall" is an object simple and common; but where is there more effect produced, than when it is agitated by the wind, and responsively vibrating to its motion? The individual and general beauty of mosses, and the richness of lichens, contribute, by the great variety of their colour, to adorn the front of old buildings. All that remains for taste to perform is the removal of ivy when it shades fretted and tracery windows, arched doors, or any neat stone work: these are in general so few, and occupy so small a part of the walls, that, however common in point of architectural beauty they may be, yet, by their exposure, a variety arises, a break is introduced, and something like an object is added. To these productions of the vegetable world, the landscape painter is under the greatest obligation. In a picture of a castle, or of any ruin, where it might be necessary to adhere to the local scene, without the introduction of any object to assist in the character of it as a picture, their judicious management would enable him to give it either the appearance of being agitated by a storm, or a peculiar interest from the ivied foliage, with its clustered branches, and the delicacy of the overhanging long grass.

Between Oakhampton and Tavistock is situated Brent Tor, a remarkable elevation, which, although distant twenty miles from Plymouth, is the first Devonshire landmark seen from the British Channel, and forms a useful guide to mariners on entering Plymouth Sound. Some writers, judging from the conical shape of the hill, and the porosity of the rock of which it is composed, conclude that it is an extinct volcano. There is at the very summit of the Tor a church, of the very small dimensions of 37 feet by 14, which can be seen far out at sea. The erection of such a building on so exposed and elevated a spot is traditionally accounted for thus:—A merchant in one of our colonies, wishing to return with his wealth to his native country, embarked full of those hopes which men, in whose bosom the *amor patriæ* is not extinguished, so fondly indulge. The vessel, wafted by light breezes, pursued her course for some days without interruption; but on one particular evening symptoms of a change appeared, and by break of day the ship was in imminent danger; for the tempest increased to such a degree as to excite the most alarming apprehensions. The agonized merchant, in the fervency of prayer, vowed that should Providence spare him from the storm, he would build a church on the first land he saw. The vessel fortunately rode out the tempest, and Brent Tor presenting itself first, on their approach to the western coast of the island, he piously fulfilled his vow, by building a church on the summit of the Tor, to remain as a memorial of his gratitude and sincerity. Whether this tradition be true or not, it is certain that a few persons still attend divine service in the church, if they have strength and vigour enough to mount. Carrington in his poem of *Dartmoor* speaks of this hill and the chapel upon it, in the following beautiful lines:—

From yon plain
Brent Tor uprushes. Even now when all
Is light, and life, and joy, on Tamar's bank,—
E'en now that solitary mass is dark,—
Dark in the glorious sunshine. But when night
With raven wings broods o'er it, and the storm
Of winter sweeps the moor, such sounds are heard
Around the lonely rock, as village seers
Almost unearthly deem. In truth it wears
A joyless aspect; yet the very brow
Uplifts a chapel, and devotion breathes,
Oft, in the region of the cloud, her hyma
Of touching melody. Impressive spot
For fair religion's dome! and sure, if aught
Can prompt to holiest feeling, and give wing
To disembodied thought, it is to bend
The knee where erst the daring eagle perch'd;
And while, with all it's grossness and its care,
Earth waits, far, far below, to worship there,—
There on the wild van of the wildest rock
That Dartmoor lifts on high.

At a short distance from Oakhampton is situated Oaklands, an elegant seat of Albany Saville Esq., lord of the manor of Oakhampton, and owner of the

castle. Oaklands is a mansion of the Ionic order, built upon a woody slope, about twenty years ago. The house has a finely proportioned portico in front; and its internal arrangements are elegant and judicious. The staircase is grand and spacious, and is surrounded by an elegant gallery, supported by Corinthian columns.

THE CRETAN AND THE SNAKE.

A FABLE.

WHO has not heard of ancient Crete,
Renowned for treachery and deceit*;
For recreant hearts, that loved to frame
Reports to blast a neighbour's fame;
For tongues that spread with foul delight
The sweltering venom of their spite,
Resembling, in Detraction's plan,
The old arch-enemy of man†!
Well might the great Apostle's word
The history of their crime record,
Charge on their holy Prelate's care,
This wholesome precept to declare,—
"Speak ill of no man‡", and impart
Such heavenly lessons to the heart,
As, under God, might bring the young
To heed their thoughts, and curb the tongue.

A CRETAN, to his title true,
A slanderer, and a foul one too,
Who loved to point the bitter jest,
And plant a thorn in virtue's breast;
Whose tongue (that small but powerful part,
The organ of a wicked heart,)
Was used to forge and utter words,
Which cut the soul like very swords,
His lazy noon-tide length had laid,
Beneath a crumbling ruin's shade,
Where ivy, with insidious force,
Helped, while it hid, destruction's course,—
Fit emblem of the slanderer's wiles,
Who veils his malice under smiles.

I warn thee, Cretan, have a care,
For folded 'midst the dry dust there,
A poisonous SNAKE, in cunning guise,
With burnished coat, and shrunken eyes,
Replete with sly and dull despite,
E'en now hath marked thee for a bite!

The blow is struck! and through the wound
Th' injected virus flows around.

But Cretans' flesh was dangerous food;
For strange! O, strange! his evil blood,
Black as the source from whence it sprang,
Too subtle for the serpent's fang,
Poured poison back, like living flame,
Which filled and shook the reptile's frame;
Till, with a deadlier venom tried,
The serpent sickened, writhed, and died. M.

* See Titus i. 12, in which St. Paul quotes a verse of Epimenides, respecting the character of the Cretans.

† The word Διάβολος (Diabolus) from which our word, Devil, is derived, means "A Calumniator."

‡ See St. Paul's Epistle to Titus, the first Bishop of Crete, iii. 2.

*** The above Fable is founded on a Greek Epigram in two lines, in which the story is told of a Cappadocian; but as the Cretans, Cappadocians, and Cilicians were proverbially classed together as of a kindred disposition, (the three Kappas in Greek,—the three C's in our language,) it is, perhaps, not unfair to assign the incident respecting the Snake to a Cretan.

GARDEN HERBS. V.

MINT. (*Mentha.*)

THERE are several sorts of mint growing wild in our fields and woods, some inhabiting a wet and marshy soil, others preferring a dry and open situation. The powerful and refreshing smell of this herb has recommended it to general notice, and we find several species cultivated in gardens for domestic and medicinal uses. Of these the most esteemed is *Spear-mint*, (*Mentha viridis*,) so called on account of the shape of its leaves which are long, and somewhat in the shape of a spear.

This herb is called by M. Valmont Bomare *Menthe d'Angleterre*, (English mint,) and he speaks of it as originally growing in this country only. It is also known in France and Italy respectively by the names *Menthe de notre dame*, (our lady's mint,) and *erba Santa Maria*, (St. Mary's herb,) from what traditionary cause we know not. This particular species must be known to most persons, as being the most useful kind of garden mint, very much employed in spring salads, as well as in sauce for roasted lamb, &c. Its carminative qualities render it a wholesome ingredient in pea soup, and very proper to be boiled with green peas. It is recommended as one of the most efficacious simples, in cases of loss of appetite, nausea, &c., and in the colic pains to which children are subject. For these purposes an infusion of the dried herb is better than the green, as containing the whole virtues of the mint. The juice of spear-mint drunk in vinegar is said to be an effectual cure for hiccups.

The next in value among the different species of mint, (of which there are not fewer than twelve indigenous to Britain,) is PEPPERMINT, (*Mentha piperita*,) much cultivated for medical use, especially in the county of Surry, whence the London market is supplied. It has a smooth purple stalk, and is easily to be distinguished from other kinds of mint by its penetrating smell, and more pungent taste, leaving a peculiar sense of coldness on the tongue. The leaves stand in pairs upon footstalks, and are of a dark green colour, oval-shaped, nerved, and pointed: the flowers are small, and of a purple colour, and appear in August and September.

From this herb, either in its fresh or dry state, a pungent oil is obtained, by distillation with water, called oil of peppermint. This oil is a favourite remedy in spasmodic cases, and has been recommended as a stimulant in Asiatic cholera. *Spirit of peppermint* is formed by adding three drachms of this oil and one pint of water to a gallon of proof spirit, and with a gentle fire allowing one gallon to distil. *Peppermint water*, when well prepared, is found to be an excellent cordial in common cases of spasm and flatulency, and is also of use to cover the nauseous taste, and diminish the painful action of saline and other medicines. The method of its preparation is as follows. Take two pounds of the herb in its dried state, or if fresh, take four pounds; add seven fluid ounces of proof spirit, and two gallons of water, and let one gallon distil. Instead of the herb itself, two drachms of oil of peppermint may be substituted. *Peppermint drops* are a convenient form of oil of peppermint, and may very easily be made by warming four ounces of powdered white sugar over a charcoal fire, and adding twenty-four drops of oil of peppermint and half a fluid ounce of peppermint water. These rapidly stirred together, and dropped on polished marble, soon harden, and may be dried by a slow heat.

PENNYROYAL, (*Mentha pulegium*,) was the favourite mint of the ancients. Pliny recounts to us the

opinions of several physicians who met in his chamber to consult on the virtues of this herb, and comes to the *important* decision that a chaplet of pennyroyal worn on the head is far better than one of roses, to relieve giddiness and disorders of the brain. Dodonæus states that a branch of pennyroyal, either fresh or dried, will much improve the quality of foul or salt water, and may therefore be important to us in circumstances of necessity, when obliged to submit to such a draught. This remark is confirmed by other writers. Gerard says "if this herb be dried, and taken to sea, it will purify corrupt water without hurting those who drink it."

This herb formerly went by the name of *Pudding grass*, from the custom of mixing it in hogs' puddings. At the time when Gerard wrote his *Herbal*, that is, in the reign of Queen Elizabeth, it was very abundant in the neighbourhood of London. "It groweth naturally wilde," says this quaint writer, "in moist and overflown places, as in the common near London called *Milesend*, about the holes and ponds thereof, in sundry places, from whence poor women bring plenty to sell in London markets: and it groweth in sundry other commons near London likewise." This herb has also been named *Run by the ground* and *Lurk in ditch*, from its creeping nature, and preference for a damp soil. Its stem is prostrate, and very much branched; its leaves much smaller than those of the other kinds of mint; its flowers, growing in whorls, of a lilac colour and very numerous. The distilled water, and the spirit of pennyroyal, may be prepared in the same way as those obtained from peppermint. The old physicians held this herb in much higher repute than it is held by the modern ones. Its virtues in hysteric and nervous affections were supposed to be great, and it was also administered as an anti-spasmodic and expectorant.

The other species of mint common in England are as follows. *Corn-mint*, which is covered with soft white hairs, and has whorls of lilac flowers, also covered with hairs. It grows in corn fields, and Withering says that when cows have eaten of it, as they will do largely towards the end of the summer, when pastures are bare, their milk can hardly be made to yield cheese, on account of a property which this plant has of preventing the coagulation of milk—a circumstance, as he observes, which sadly puzzles the dairy-maids.—*Rugged Field-mint*, with wrinkled leaves and whorls of purple flowers.—*Narrow-leaved mint*, having a branched stem, lanceolate leaves and purple flowers.—*Tall Red-mint*, growing in watery places.—*Horse-mint*, of which Culpeper tells us that "the juice, laid on warm, helpeth the king's evil, or kernels in the throat."—*Hairy-mint*, *Round-leaved mint*, and common *Cat-mint*.

It was an ancient custom for rustics to perfume or scour their tables with mint before serving their suppers.

> Then rubbed it o'er with newly gathered mint—
> A wholesome herb, that breathed a grateful scent.—Ovid.

Their meats were also seasoned with this herb, the very smell of which, as Pliny observes, "recovers and refreshes the spirits, as the taste stirs up the appetite for meat." We learn from the same writer that mint was put into milk, to prevent its turning sour, or curdling, and that it was customary to take mint, when milk was drank, that it should not curdle or coagulate in the stomach. It is a common practice at the present day to rub the inside of bee-hives with mint and sugar before the swarm is inclosed in it, as it is supposed to attach them to the hive.

When dry and digested in rectified spirits of wine, this herb gives out a tincture which appears of a fine dark green, or of a bright red colour according as it is viewed by day-light or by candle-light.

Having thus enumerated the uses and beneficial qualities of mint, we proceed to mention the cautions given by some of the old herbalists against the immoderate employment of this and other herbs.

In a volume published in 1689, purporting to show how health and long life may be preserved, we meet with the following cautions respecting the use of herbs.

All herbs are of a slender nourishment, and of a naughty subtil juice and watery, having many superfluities, and therefore in the choice of them observe well these following rules:

1. That you eat but a small quantity of them, and that they may better nourish, use them boyled in broth.
2. That none but lettice be eaten raw, and that also in vinegar, to allay the boyling of the blood, the heat of the liver and stomach.
3. In winter use hot herbs, in summer cool, in spring and autumn temperate.
4. That you do not eat of herbs which begin to put forth their seed.
5. That herbs be eaten at the beginning of dinner, since that almost all are laxative.

Respecting mint this author has the following odd recommendation. "'Tis to be used in winter by old, phlegmatic, melancholy men, but in summer 'tis naught, especially for young choleric men," adding "If you eat but little, and with other cool herbs, it is less hurtful."

Culpeper also tells us that mint "is extreme bad for wounded people, so that they say a wounded man that eats mint, his wound will never be cured."

This herb belongs to Linnæus's fourteenth class and first order, (*Didynamia gymnospermia*,) and is of the natural order *Labiatæ* or *Lamiaceæ*. It may be propagated by seed, but a few bits of its roots will spread into a bed in the course of a twelvemonth, and where a bed of it is once established it is difficult to keep it within proper bounds. Its roots spread in all directions, and the young shoots frequently obtrude themselves into the neat parterre, or even spring up on the well trodden pathway.

GIPSIES OF THE SOUTH OF FRANCE.

Some pious protestants in the south of France have lately begun to interest themselves in the gipsies, or Bohemians, as they are there called, who live in the forest of the Basque country, and employ themselves chiefly in smuggling between France and Spain. The following account of a visit to one of the hamlets of this singular race is from a letter addressed by two gentlemen of Orthez to their friends in Paris.

"On the twenty-third of August we set out from Salies for the Basque country, with the view of discovering some of the Bohemians. After encountering considerable difficulties, and suffering much fatigue, towards five in the evening we reached the wood of Maherin, where we had been told we should meet with the objects of our search. We did, in fact, perceive some small hovels about eight feet square, and about the same height. Having gone into one of them, we found a young man seated on the floor, and employed in mending a leathern sack, used in transporting contraband articles, such as sugar, tobacco, and coffee. Smuggling is their only trade. This young man had a common musket slung across his back. Not far from him a young woman, who was no doubt his spouse, was engaged in baking on the charcoal embers an Indian corn cake, which two little ones were watching with evident impatience.

"We greeted them in Basque: they replied to our greetings with the surprised air of persons whose looks seemed to say—who gave you leave to come

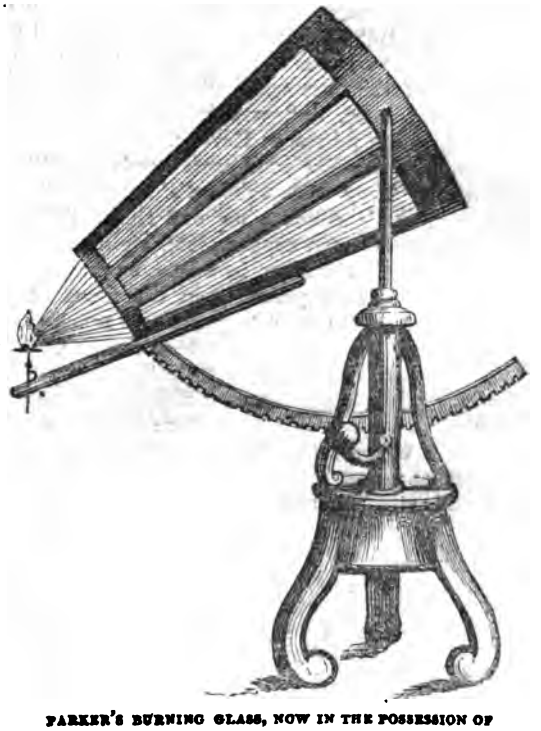
here? But their fierce looks did not alarm us, for we knew that we were under the protection of our good Master. We then inquired in the same language, if they spoke French: they replied that they knew no language but Basque. 'Go for Gracieuse,' said the woman to her husband.—'Not only for Gracieuse,' said I, 'but for all the Bohemians that you can bring with you.' The husband ran off, but soon came back, accompanied by several men who could hardly recover their breath: they had put themselves to such speed, doubtless supposing that the family, by which we were surrounded wanted help. Not one of them entered, but they placed themselves before the door in such a way as to prevent our escape had we attempted it. To us they all seemed to look very decided; but without giving them too much time to think, I asked which of them could speak French. The eldest of the party, a man seemingly about fifty, then passed the threshold, and said in Basque—'Not French only, but you may talk to us in Gascon or in Spanish; it matters not, we are ready to reply to anything you may have to say.' 'Well then,' said I, laying my hand on his arm, 'we have very important things to speak about,' and drawing him towards me, I added, 'come in and let us be seated.'

"There was but one chair and a small wooden stool I took the chair, and pointed to him to take the stool I then told him the object of our journey; of the wish felt by some of God's servants to do something for the present comfort, and still more for the everlasting welfare of the Basque Bohemians. 'Think you,' exclaimed the Bohemian with great force, 'that we know nothing about God?'—'You may know that He is a terrible being, but our wish is that you should know Him as a God of love.' I then with much earnestness spoke to them of the good news of salvation, when I was interrupted by one of them who exclaimed—'Alas, we are much greater sinners than you are.'—'Yes, that is very true,' said the others; 'we cannot expect forgiveness but on much harder terms than you.' 'Undeceive yourselves, my friends,' said I; 'if you go to Jesus who is the source of forgiveness, you, no less than we, will be graciously received.' I then asked whether, in case of a schoolmaster coming to instruct both them and their children; to teach them to read the word of God, and to know more of its author, they would give him a welcome reception, intrust their children to him, and go themselves to receive his instructions? The eldest of the party replied—'Assuredly we would; we ask for nothing better; let him but come, and he will be sure of a welcome.' 'I want you all, one by one,' said I, 'to answer;' on which they all exclaimed, 'Yes, Sir, yes.'

"The Bohemian orator then fully explained to them what I proposed, and when he had ended speaking, they all cried out—'We wish to have him! we wish to have him!' During this conversation betwixt the men and us, the women, who were standing outside, showed on their part how well pleased they were, and we could see that the prospect of instruction was regarded by these poor people as a great advantage. They promised to prevail on other Bohemians, who, without any fixed abodes, spend their days and nights in the forest, with no better shelter, even during snow, than the trees afford, to come and establish themselves near the religious teacher who was to be sent to them. On our leaving the spot, we took several of the children in our arms, and all the Bohemians affectionately shook hands with us, begging us not to delay returning with their expected teacher."

ON BURNING GLASSES.

II.



PARKER'S BURNING GLASS, NOW IN THE POSSESSION OF THE EMPEROR OF CHINA.

In our former paper we traced the progress of burning instruments down to the construction, by Buffon, of one consisting of a great number of flat silvered plates of glass.

Buffon next constructed instruments that would focalize at the distance of a few inches, instead of one or two hundred feet. He took a circular plate of glass, about two feet in diameter, perforated it in the centre, and fixed it into an iron frame. A very fine screw, fixed at the back, passed through the central hole, and worked in a nut on the other side, so that by turning the screw, the flat glass became drawn into the form of a concave mirror. The experiment was then tried, of giving it various degrees of curvature, in order that it might focalize at various distances; but, in the attempt to bend it more than it would bear, it broke; as did also another, three feet in diameter; but a third one, about eighteen inches in diameter, was preserved as a model of Buffon's ingenuity.

The cause of the fracture of these mirrors seems to have been through the perforation made in their centres. Buffon, therefore, proposed to get rid of this perforation in a singular way. He caused a circular glass plate to be fixed at the end of a cylindrical drum, made of iron or copper, and completely air-tight. The cavity of the drum being exhausted of air, by means of the air-pump, the glass was pressed in by the weight of the external atmosphere, and became a concave mirror. He afterwards proposed another mode of effecting this, without the aid of the air-pump; which was, to grind a small portion of the glass into the form of a convex lens, and to place a sulphur match behind it; the heat of the sun would kindle the sulphur, if the latter were in the focus of the little lens, and the heat would rarify the air within the drum, and make a partial vacuum. Other modifications of this contrivance have been proposed; but they are not sufficiently practicable to be mentioned here.

After this, Buffon constructed concave mirrors in a

different way, by bending plates of glass, aided by heat, on moulds of a spherical form, and having them afterwards ground, polished, and silvered on the convex side. But so delicate were all these processes, that twenty-one mirrors were broken out of twenty-four. One of the three successful ones was forty-six inches in diameter, and was regarded as the most powerful burning mirror in Europe.

Mirrors of a peculiar kind were made by Hoesen and Ehrard. They were built up of several pieces of solid wood, made concave on one side. This side was then covered with copper plate, highly polished, and in front of it was an iron arm, so placed as to receive any substance precisely in the focus of the mirror. The curve was a parabola, much more difficult to construct than a spherical curve. This form is so calculated for concentrating the parallel rays of the sun into a point, that although these mirrors were not coated with any more reflecting substance than copper, metals were rapidly perforated, vegetables and bones were immediately burnt to a cinder and vitrified, and the hardest stones resisted but a few seconds.

Newton's attention was directed to the subject of burning glasses, by some remarks of Gregory's, and he procured seven concave glass mirrors, each about a foot in diameter. One of these was placed in the centre, and the other six ranged round them at such angles, that the reflected rays were all focalized to one spot. The focal length was a little less than two feet, and the heat was sufficient to melt gold in half a minute, and to vitrify brick in one second.

Leiher, of St. Petersburgh, made many burning mirrors, the most curious of which was this: he made a concave frame of wood, and covered the concave surface with a paste, made of flour, chalk, &c., and on this paste he fixed a number of pieces of silvered glass, each about half an inch square; thus forming a compound mirror of numerous pieces.

After this, some elaborate calculations were made by M. Peyrard, as to the most effectual mode of combining a number of plane mirrors together, to produce a powerful effect. Where flat pieces are used, it is extremely difficult to arrange them in such a manner that the reflected images shall combine in one focus. Peyrard proposed to employ as many persons as there are mirrors, each person to have the management of a mirror, and, by means of some rather complicated apparatus, to hold or fix it in such a position as to assist in producing the desired effect. His arguments, however, though they might appear good in theory, were not of a nature to be easily put in practice.

We have stated that one distinguished modern writer conceives it to be not improbable that the effects attributed to the burning apparatus of Archimedes, were really produced, though not, perhaps, to the fullest extent. Another modern writer (in the *Encyclopædia Britannica*) comes to an opposite conclusion, from the results of Buffon's experiments. He says:—

A distinguished philosopher, in the end of the eighteenth century, with all the advantages of the amazing progress of science and the arts up to that period, has, after a laborious research, and numerous experiments, with all the leisure of philosophical inquiry, at last succeeded in constructing a combination of mirrors, which inflames combustible materials at a distance, and in a convenient situation. But when we consider the low state of the arts in the time of the Syracusan philosopher, the inferior reflecting power of any mirror then in use, the difficulty and expense of procuring such a number as would be necessary, and of combining them together, so as to act with facility and effect on an enemy's fleet,—seeing that even in Buffon's apparatus, it took half an hour to bring the mirrors to a focus; and, therefore, in the case of a vessel in motion, it would be next to impossible to follow it, and keep all the glasses steadily directed to one point,—if we consider all these circumstances, the difficulties of the undertaking must appear so enormously increased, that it seems to be no disparagement to the genius of Archimedes, to require stronger proof than has yet been adduced to convince us of the fact.

We shall now direct the reader's attention to those burning instruments which act by focalizing light transmitted through glass lenses, instead of reflected from mirrors.

Although it seems probable that the ancients were, to a certain extent, acquainted with burning glasses of such a form, yet the first one of any importance, of which we have an account, was made by Tschirnhausen. This was a convex glass lens, between three and four feet in diameter, with a focal distance of twelve feet, and the diameter of the focal image about an inch and a half. In order to reduce this image, the refracted rays were received on a second lens, behind the larger one, with a focal length of eight inches. The large lens weighed 160 pounds, and produced powerful effects. Wood, even when wet, was burnt instantly; small pieces of metal were easily melted; tile, slate, delft ware, pumice-stone, and talc, grew red, and then vitrified; sulphur, pitch, and resin, were melted, even when under water; the ashes of wood, vegetables, paper, and cloth, were converted into a kind of glass.

Buffon did not confine himself to burning instruments acting on the catoptric, or reflecting principle but he also made some on the dioptric, or transmissive plan. He first constructed a *water* lens; he combined two circular segments of a glass sphere, so as to form a lens-shaped cavity to be filled with water; these glass segments were first moulded into their proper shapes, and then regularly ground on both sides, so that the convex and concave sides were exactly parallel. The lens thus formed was thirty-seven inches in diameter; but with all the care that Buffon took in the construction, he found that he could not obtain results adequate to the labour bestowed, principally on account of the small refractive power of water.

Buffon proposed to construct a glass burning lens, with a smaller quantity of material than that of Tschirnhausen, although of the same diameter, and of greater power. In a large lens, the thickness at the centre is great, and the absorption of the rays of light is also great. He therefore proposed to form a lens of three concentric circular pieces, or zones, resting upon each other. Supposing the required lens to be twenty-four inches in diameter, this would require a central thickness of three inches, if the lens were one solid piece; but it might be built up piecemeal thus: let the central part be a lens, eight inches in diameter, and one inch thick; let this be inserted in the middle of a circular zone, whose internal and external diameters are respectively eight and sixteen inches; lastly, let this zone be inserted in an outer one, whose diameters are sixteen and twenty-four inches. If the curvatures of all the pieces were ground to the same radius, the solar rays would be refracted to a focus just as completely as if the lens were made in one solid piece, while the weight of material would be less, and the absorption of light less. We do not believe that Buffon actually constructed a lens of this kind; but the suggestion rests on sound principles.

The next lens we have to record was a modification of Buffon's liquid lens. M. Bernieres constructed, for M. Trudaine de Montigny, a lens, consisting of two spherical segments of glass, eight feet radius, and

three-quarters of an inch thick. When these were placed edge to edge, they enclosed a lens-shaped cavity, four feet in diameter, and six and a half inches thick in the middle. This cavity was filled with 140 pints of spirit of wine; and a lens was thus produced which would melt a farthing in half a minute. The focus was, however, very large, and, in order to concentrate it, the rays were received upon a second lens, by which they were brought to such a narrow focus, that pieces of forged iron were fused in fifteen seconds, and hardened steel melted in five minutes. Its effect on platina was curious; some grains of this metal appeared to be drawn together, diminished in bulk, and prepared for fusion; a little afterwards, it bubbled up and smoked; all the grains were united into one mass, but without forming a spherical button, like other melted metals.

The most powerful burning apparatus ever made was constructed by Mr. Parker, a London optician, about the beginning of the present century. It consisted of two convex glass lenses, connected together by the apparatus represented in our cut. There is a conical-shaped frame-work, at the upper and broad end of which is fixed the larger of the two lenses, and at the lower end the smaller lens. The large lens was double convex; when fixed in the frame it exposed a surface of thirty-two and a half inches; it was three and a quarter inches thick in the middle; focal distance, six feet eight inches; diameter of focus, one inch; and weight of the lens, 212 pounds. The smaller lens exposed a clear surface of thirteen inches diameter when in the frame; it was about one and a half inches thick in the middle; focal distance, twenty-nine inches; diameter of focus three-eighths of an inch; and weight of the lens twenty-one pounds. The combined focal length of the two lenses was five feet three inches; and the diameter of the focus, half an inch. The conical frame-work was intended merely to keep the lenses in their proper relative positions. A rack and pinion was placed beneath the machine, so that it could be elevated or depressed, according to the altitude of the sun. A little platform or stage was fixed behind the smaller lens, and the stage was capable of being so adjusted, that any substance placed on it would be precisely in the focus of the instrument. With this apparatus experiments were made before the Royal Society. Gold, platina, nickel, and cast-iron, were fused in three seconds; a cube of steel, weighing ten grains, melted in twelve seconds; minerals, gems, lavas, and bodies of similar refractory natures, were fused in times varying from sixteen to eighty seconds. A diamond of ten grains, when exposed to the lens for thirty minutes, was reduced, by evaporation, to six grains. Ten cut garnets were taken from a bracelet, and exposed to the lens; in a few seconds, they all fused together into a globular form. It is remarkable, as showing how little we yet know of the connexion between light and heat, that although the lunar rays are so beautifully clear and bright, not the slightest effect could be produced on a very delicate thermometer, when the lunar rays were concentrated on it by Parker's lens. A similar experiment was tried on the lunar rays, by Buffon and Tschirnhausen, but with a similar want of success; though millions of lunar rays were congregated in one spot, no sensible heat could be perceived.

Sir David Brewster, thirty years ago, proposed many improvements in the constructing of burning apparatus, chiefly by combining transmission and reflexion to produce joint effects; and there is no doubt that, in an optical point of view, these suggestions were worthy of the distinguished author. But so much has been done of late years, in the production of an intense heat by chemical means, especially by the oxy-hydrogen blowpipe; that it is not very probable that burning glasses, acting by solar rays, will occupy so much attention hereafter, as they have hitherto. The relation between a burning lens and the oxy-hydrogen blowpipe, is somewhat analogous to that between a sun-dial and a chronometer: the lens and the sun-dial can only be used while the sun is shining: the blowpipe and the chronometer are available in spite of weather, or of temperature, or of the darkness of night.

THE SMOKE-JACK.

"I give you joy of the report
That he's to have a place at court.
Yes! and a place he will grow rich in—
A turnspit in the royal kitchen."

A WORK of considerable learning and extent might be written on the application of self-acting machinery to the performance of processes which at one time were executed by the human hand, or by animal power. It is not many years ago that the turnspit was to be met with in every kitchen, almost as commonly as the cook; but now the smoke-jack performs, in a far more effectual and less expensive manner, the office which a little boy or a poor little dog once held. Indeed, one of the strongest incentives to the adoption of automatic machinery is the superiority and regularity of the work performed by it, compared with the productions of human or animal machines, that have a *will* of their own, not always controllable by a master's voice.

It appears that boys were employed to turn the spit, both before and after dogs were trained to that office. Du Cange speaks of a boy-turnspit so early as 1201. We also meet with an anecdote of Louis the Eleventh, (about 1460) to the following effect. A whim of the monarch led him to visit the royal kitchen, to see what was going forward. He found a little boy turning the spit. The boy was handsome, and his appearance so engaging, that the king thought him deserving of some better office than the one he filled. Louis accosted him, inquired whence he came, who he was, and what he earned by his employment. The turnspit, not knowing the king, replied to his queries, without the least embarrassment, "I am from Berny, my name is Stephen, and I earn as much as the king." "What then does the king earn?" asked Louis. "His expenses," replied Stephen, "and I mine." The king, pleased with the smartness of the reply, promoted the turnspit to the situation of groom of the chamber.

The employment of dogs as turnspits has given a distinctive name to a peculiar class of those animals. The turnspit is described as a spirited, active, and industrious kind of dog, once considered as an indispensable attendant on the spit, which, by a peculiar contrivance, and the aid of its own exertions, it was enabled to turn at an even pace. The body of this animal is long, the legs very short, and the tail curled on the back; its usual colour is grayish, with black spots. Gmelin notices three varieties of this family of dogs; one of which has straight feet, another curved feet, and the third has the body covered with long curly hair. The terrier is the Gmelinian *Canis vertagus*.

The method of teaching these dogs their duty was summary rather than humane. The dog was put into a hollow wheel, or drum, and a few live coals with him; thus situated, the poor animal could not pause without burning his legs; he therefore kept up a

constant gallop within this canine treadmill. It will be readily supposed that these dogs were not much attached to their profession; for, setting aside the unpleasant associations connected with their apprenticeship, it was hard work to run in a wheel for two or three hours, turning a piece of meat double or treble their own weight.

Many droll occurrences are connected with canine turnspits; we select one which took place at Bath many years ago. It is related that a party of wags hired the chairmen, on one particular night, to carry off all the turnspits in the town, and lock them up till the following evening. This was done; and next day multitudes of cooks were to be seen in the streets;—"Pray have you seen my Toby?" says one. "Why," replies the other, "I was coming to ask you if you had seen our Chloe;" when up comes a third inquiring for "her Pompey." There was no roast meat in Bath that day; but there was a good deal of perplexity on the one hand, and amusement on the other.

It will be seen from this anecdote, that the turnspits were under the especial protection of the cooks. The introduction of the smoke-jack has happily superseded the use of dogs; and modern cooks have transferred their affection to the cat, which, compared with its canine predecessor, does, indeed, enjoy a sinecure.

The principle upon which the smoke-jack acts may be shown by an easy experiment. Upon a flat disk of thin pasteboard describe the spiral, as in fig. 1; let this be cut out, and extended, by raising the centre above the first revolution. Make a small indentation in the centre of the spiral, and then poise it on the point of a wire, as in fig. 2. If the apparatus be placed on a warm stove, or the flame of a lamp or candle be applied below it, the spiral will turn round, apparently without any cause, and continue to spin with considerable velocity. The cause, however, is the air, which, being rarefied by the presence of a heated body, ascends, and thus produces a current which propels the spiral.

Fig. 1.

Fig. 2.

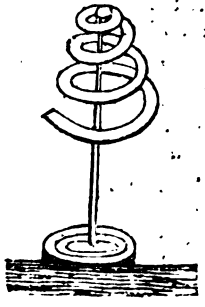
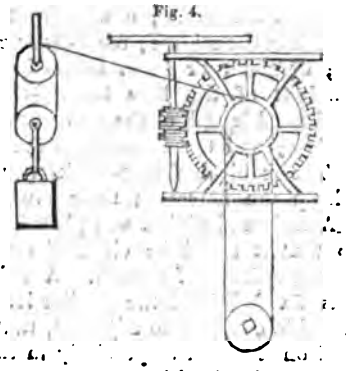


Fig. 3.

Upon this principle is the mechanism of the smoke-jack constructed, as represented in fig. 3. A number of vanes of thin sheet-iron are arranged in a circle, but they are all set obliquely. When a fire is lighted below, the air of the chimney becomes rarefied, ascends, and creates a partial vacuum: fresh air pours in, and, by the construction of the fire-place, the greater part of it must pass through the burning fuel. This gives to the "draught" of air in the chimney a considerable ascensive force, which force is greater in proportion as the chimney is tall; the ascending air, therefore, striking upon the surfaces of the inclined vanes, causes the spindle, to which they are attached, to rotate, and this motion is communicated to the spit by means of a small bevelled wheel which works into another small wheel, placed upon a horizontal axis, with a screw cut upon the other end of it; this screw works into a wheel on the axis of the pulley that turns the spit, and the latter is thus carried slowly round. The vanes should be placed in the narrow part of the chimney, where the motion of the smoke and heated air is swiftest: the vanes should also occupy nearly the whole horizontal space of the chimney, so that the greater part of the current may be intercepted.

Another form of kitchen-jack is shown in fig. 4, in which the descent of a heavy weight is the moving power. In this machine a line, or chain, of considerable length, is coiled round a central barrel: the other end of this line is passed over pulleys, which are usually situated outside the house, so as to allow a greater range for the weight. A pulley is attached to the spindle of the central barrel, and another is attached to the spit, and both pulleys are connected by means of an endless chain. The suspended weight, in descending very slowly, uncoils the line by turning the barrel round, and thus the spit is made to revolve. To ensure an equable motion, and to get rid of those jerks and irregular revolutions which arise from the unequal spitting of the meat, a toothed wheel is placed on the axis of the barrel: the teeth work in a double-threaded screw, placed upon the spindle of a horizontal fly-wheel, which, rotating with considerable velocity, prevents any irregularity in the motion of the barrel. The weight is wound up by means of a key, which fits on to the projecting square end of the spindle of the barrel.

Fig. 4.



THE tree of knowledge is grafted upon the tree of life; and that fruit which brought the fear of death into the world, budding on an immortal stock, becomes the fruit of the promise of immortality.—SIR HUMPHREY DAVY.

THE affections imply a spirit of self-sacrifice, and often our virtues, like our children, are endeared to us by what we suffer for them.—SHARPE.

The wheat, although it lies awhile in earth,
And seemeth lost, consumes not quite away;
But from that womb receives another birth,
And with additions riseth from the clay.
Much more shall man revive, whose worth is more;
For Death, who from our dross will us refine,
Unto that other life becomes the door,
Where we in immortality shall shine.—WITHER.

GENUINE praise, like all other species of truth, is known by its bearing full investigation; it is what the giver is happy that he can justly bestow, and the receiver conscious that he may boldly accept; but adulation must ever be afraid of inquiry, and must to their degrees of moral sensibility

Be shame to him, that gives and him that takes.
CRABBE.

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A BRIEF HISTORY OF ARCHITECTURE. No. III.

PRIORY CHURCH, DUNSTABLE.

6. SARACENIC ARCHITECTURE.

WHEN Constantine, in A.D. 328, founded the city of Constantinople, he enriched it with the treasures of Rome: all that could be removed was taken from the "imperial city," to adorn his new capital. At a subsequent period, when the successor of Constantine removed from the city every valuable specimen of art, (which Alaric had spared in the sacking of Rome,) he loaded several ships therewith, which were driven by a tempest upon the coast of Sicily; the commander was killed, and the Saracens, then in possession of the country, carried their spoils to Alexandria.

The Arabian, Saracenic, or Moorish architecture is another illustration of the remark already made of the influence of religion upon architecture. The religion of Mohammed was diffused from Indus to the Nile, by Arabs, whose fanatical zeal led them to put to the sword all who refused to own the doctrines of the Koran. The Roman power had declined, and the eastern countries, once subject to it, were so enfeebled by luxury or misrule, as to fall easily under the dominion of the arch impostor and his immediate successors. In a very few years Syria, Persia, and Egypt were totally subdued; more than four thousand Christian churches were destroyed, and rude shrines, called *maschiads*, afterwards *mosques*, were substituted. But as the religion of Mohammed became more securely settled, its followers acquired a love of luxury and splendour, accompanied by a taste for learning and the arts of life. The literature of the Greeks was translated into Arabic, and schools were established for the study of science, especially mathematics, in which the Arabians greatly excelled.

Thus, while Europe was involved in darkness,—while the rude tribes of the north subjected the fairer portion of the Roman empire to devastation and ruin,—the Arabians were advancing in civilization, and obtaining that efficiency in the arts of peace and war, which made them so long celebrated.

The earlier style of the Saracenic architecture bears some resemblance to that which prevailed in the Byzantine empire. It is probable that the cupolas of their earlier buildings were suggested by those of Sancta Sophia, and similar structures; and the columns which they employed, if not actually taken from existing Roman structures, were rude imitations of them. But as they advanced in science and

art, they seem to have constructed temples peculiar to themselves; and, disdaining any longer to borrow the idea of them from the nations they had conquered, they invented, or rather composed, from the study of Egyptian, Greek, and Roman edifices, that style which, even to the present day, is to be seen wherever Mohammedan dominion prevails.

Saracenic architecture is singularly light and fantastic, yet marked with grace and elegance. It is exceedingly difficult to define, on account of that endless variety of form which everywhere prevails. Their columns are slender and variously formed, and are employed generally to support low arcades: the shafts are short and thin; plain, or ornamented with lines in perpendicular or spiral grooves: the capitals are either imitations of the Grecian orders, or formed of foliage variously disposed, and crowned with a plain abacus. In Saracenic architecture we always find large numbers of these columns, either clustered or in rows.

The Arabians are also celebrated for their arches of which three sorts were employed; viz., the *crescent*, or horse-shoe arch, the *round* arch, and the *cuspid* arch.

The first form of arch is peculiar to Mohammedan architecture. The *crescent* is the symbol of the Mohammedan faith, as the cross is of the Christian; and its form is said to have been first introduced in architecture by Muavia in his new capital of Damascus. It was called the *sacred* arch, and was splendidly adorned with sculpture: it formed the usual entrance of mosques. This arch may be considered as the really distinctive feature of the Saracenic style.

The *round* arch was simply an imitation of that of the Romans, and seems to have been used indiscriminately by the Arabians.

The *cuspid* arch was formed by segments of circles, meeting in a point at the vertex.

As the religion of Mohammed forbade the representation of animals*, the ornaments of the Arabians consisted of coloured glazed tiles and mosaics, which were employed in a fanciful yet tasteful manner, in adorning their apartments: other ornaments were made to consist of texts of the Koran, inlaid in the form of mosaics, and often adorned with precious stones; of plants, stalks, and foliage gracefully entwined, either painted or formed in highly relieved stucco. The enrichments of Moorish edifices are very much confined to flat surfaces, the walls being sculptured all over with ornaments. The appearance of the buildings erected by Mohammedan conquerors in Spain leads to the supposition that the idea of thus ornamenting them must have been derived from the hieroglyphical embellishments of Egyptian temples. From the general appearance of these Moorish ornaments has arisen the term *Arabesque* or *Moresque*, applicable to all ornaments of a fantastic character.

Another species of ornament, called *first-work*, is also prevalent in Arabian architecture. It is said to have originated with the Persians, as a sort of screen capable of admitting air and light, and excluding the direct rays of the sun. This form of ornament admitted of a great display of elegant taste.

Corbelling has also been referred to the same style: but its origin is very doubtful. *Corbels* are projections from a wall, intended for the support of any object. The Arabians used them most in their castles, to support a projecting parapet, in the floor of which were perpendicular holes, called *machicolations*†, whence the besieged could, under cover, dart missiles, and pour down melted pitch, and other destructive materials, on the besiegers who should attempt to scale the walls.

We see the Arabian style well displayed in the numerous mosques, tombs, and mausoleums of the Mohammedan religion; the most prominent features of which are the towering domes and encircling minarets. The latter are light, circular turrets, rising high above the other parts of the building, and furnished at the upper parts with projecting galleries, where the muezzins call to prayers. The figure at p. 253 represents this sect, as also some of the broader features of Arabian architecture. We may also refer to the description of the Moorish palace of Alhambra, (*Saturday Magazine*, Vol. I., p. 114,) as affording some idea of the splendour of Saracenic architecture.

* About the tenth century, however, the caliphs introduced sculptured animals, such as lions, griffins, &c., supporting columns, and adorning fountains.

† This word, resulting from the union of a Latin and a Greek word, implies *war-sieves*.

7. THE SECOND CHRISTIAN ERA.

What awful perspective! While from our sight
With gradual stealth the lateral windows hide
Their portraitures, their storie-work glimmers, dyed
In the soft chequerings of a sleepy light.
Martyr, or king, or sainted eremite,
Whoe'er ye be, that thus—yourselves unseen—
Imbue your prison-bars with solemn sheen,
Shine on, until ye fade with coming night!
But, from the arms of silence—List! O list
The music bursteth into second life;—
The notes luxuriate—every stone is kissed
By sound, or ghost of sound, in mazy strife!
Heart-thrilling strains; that cast before the eye
Of the devout a veil of ecstacy!

They dreamt not of a perishable home
Who thus could build. Be mine in hours of fear
Or grovelling thought, to seek a refuge here;
Or through the aisles of Westminster to roam;
Where bubbles burst, and folly's dancing foam
Melts, if it cross the threshold; where the wreath
Of awe-struck wisdom droops; or let my path
Lead to that younger Pile, whose sky-light dome
Hath typified by reach of daring art
Infinity's embrace; whose guardian crest,
The silent cross, among the stars shall spread
As now, when she has also seen her breast
Filled with mementos, satiate with its past,
Of grateful England's overflowing dead.

——— WORDSWORTH.

DURING the middle ages, when intercourse between distant nations, and even between neighbouring states, was uncertain and difficult; when the pursuits of commerce and the arts of civilized life were almost in a torpid state; when improvements were slowly introduced, and carelessly received, it is especially worthy of remark that architecture became more widely diffused, at the same time that it presented a greater uniformity of feature, than has been the case in any succeeding, and apparently more favourable period. And not only did there exist a striking resemblance to each other in all the buildings of that date, however distant the countries in which they were constructed, but there was also a rapid adoption of new forms and combinations: so that, whenever a variation of style occurred in any particular spot, the knowledge and imitation of it were speedily found to prevail in places the most remote; and even such buildings as had been commenced according to some other style were altered and fashioned in accordance with the new mode.

To account for this remarkable fact, we may observe that, at the period of which we are speaking, when the lay portion of the community was engaged in constant warfare and devastation, the only safe places of retreat where industry might be employed, and the arts might be exercised, were the churches and convents. The study of architecture was chiefly confined to the members of religious communities; and at that time also, the skill and taste of the architect had scarcely any other object than the erection and ornament of sacred edifices: hence we may trace, in the intercourse maintained between the different monasteries, and in the frequent journeys performed by monks, on the concerns of their various orders, the means by which a knowledge of architecture, and of the variations introduced therein from time to time, might be transmitted from one country to another, and acted upon in the manner before mentioned. But another, and more universally prevailing cause for the similarity of architectural buildings at that period, seems to be the awakening of Lombardy and the neighbouring states of Italy to trade, commerce, and independence, and the formation among their citizens of companies, free corporations, or *guilds*, possessed of the exclusive privilege of exercising their peculiar trades or professions. Not only mere mechanical employments, but those of a more intellectual nature, were submitted to the shackles and restrictions of these guilds, and were only to be entered on by a hard and severe apprenticeship.

When Lombardy had embraced the Christian faith, its kings and queens were emulous of filling their dominions with churches and monasteries: thus were called into full activity the talents and resources of the company of builders, who had associated themselves into similar bodies to those just described, and who, after passing the different fixed stages of apprenticeship, were received as masters, and entitled to exercise their professions as "free and accepted masons." But Lombardy itself could not long find employment for these companies, or make their privileges of great and important benefit to them: another sphere was

accordingly sought by them, and in the north of Europe, where the gradual spread of Christianity produced a corresponding need for sacred edifices, they found that occupation which had begun to fail them in their native land. Endowed by the Pope with peculiar rights and privileges, the masonic associations went from city to city, and from country to country, regulating for themselves the price of their labour, prohibiting native artists from entering into competition with them, and claiming entire exemption from the laws and statutes of the countries in which their services were required. Whether they entered a country of their own accord to seek employment there, or whether they were called thither by missionaries who had preceded and prepared the way for them, they were always headed by a chief surveyor, who governed the whole party, and appointed one man out of every ten, under the name of "warden" to overlook the nine others in their work.

Thus did the architects of all the sacred edifices derive their knowledge from the same source, and obey the rules of the same central school; and thus is explained the otherwise inexplicable fact of the similarity of construction in buildings the most remote from each other, and which are known to have been erected almost simultaneously; hence also the rapidity with which changes in the style of architecture were adopted in different countries more or less distant from each other. So numerous at length were the masonic companies, that many were frequently seeking to erect religious edifices in the same country; while so emulous were they of distinction in their art; so devoted in the employment of their faculties on that single study, that, difficult and complicated as their subject was, they were enabled to attain an eminence, and to advance the art to a degree of perfection, which would be to us altogether past belief, did not the result of their labours, in many cases, remain to prove their extraordinary skill. For the purpose of securing to themselves all the benefits of their craft, the corporate bodies of free and accepted masons are found to have guarded with peculiar care the knowledge which they had themselves attained; gradually revealing it under oaths of profound secrecy to those who wished to become members of their community, and making it a perfect mystery to the public at large. It appears, also, that they either closely concealed, or even destroyed the calculations and working plans which they must have had to aid them in their labours; so that they have left few traces of the skill by which they performed their admirable works.

On the diminution of papal influence in different countries, and on the increase of learning and industry among the inhabitants, the jealousy of the native sovereigns was awakened at the intrusion of bodies of foreigners, possessing privileges as wide, and rights as exclusive, as were those of the free-masons. The support derived by these companies from the papal see, being also more precarious, they gradually began to decline: so that, in consequence, in some places they dissolved their communities; in others they were expelled; until at last they ceased altogether to follow their profession, and nothing remained of this once powerful body but an empty name and formulary, which others have adopted and appropriated to their own use for the concealment of pursuits, which, if not positively beneficial, are at least innoxious to the world.

The progress of architecture was for a while suspended on the approach of the thousandth year after the birth of our Saviour, owing to the very prevalent idea that that would be the period of his re-appearance, and of the destruction of the globe. It was not until the time had passed by, and men began to recover from their fright and torpor, that they could apply themselves to the repair of their churches and monasteries, or to the completion of those which had been left neglected at the period of general dismay. But, subsequently to this, we find the number of churches rapidly increasing, and many a stately pile may be traced as the work of the architects of that century. The Crusades too, which ensued in less than a century after the bygone millenium, greatly increased the revenues of the church, and were in consequence the means of augmenting the number of religious edifices in every Christian country. At the same period an improvement took place in civil architecture. The nobles who were bound to the Holy Land often sold privileges and enfranchisements to the cities under their control; and this producing an increase of wealth and independence to the citizens, they soon began to want, and to erect, edifices for civil purposes, which were often extensive and magnificent. In Lombardy, and in the cities of the Adriatic, were seen the first magnificent town halls; and later we may trace them in Germany, from thence we find them adopted in Belgium, Bruges, Ghent, Antwerp, and Amsterdam.

We do not find that the free-masons, privileged as they were by the papal authority exerted on their behalf, could ever find access to the Greek empire; nor does it appear that the regions which fell under the sway of the Mohammedan powers were much indebted to Rome, or to the free-masons, for their architectural buildings, though they seem to have borrowed from Constantinople and from the Greeks. Where the Moorish kings held sway, we find the Christians, in Spain, to have copied their style of architecture; and it was not until the Catholics had acquired a decided superiority in that country, that the Gothic style of architecture began to prevail.

We have already stated that the introduction of the arch was productive of great and important changes in Roman architecture. One of the features of the style which succeeded the ancient Roman was that which is now called *groined vaulting*, the idea of which must soon have presented itself to any one employed in the construction of a common cylindrical vault; since the intersection of two of the latter would produce the groined vault. The ribs of the groins were made to rest on columns, and the differences of character in that species of architecture which we are about to consider arose from the various modes of arranging this system of arches.

The style of building which prevailed in Europe from the fall of the Roman empire till the sixteenth century, and which is marked by the consistent application of the pointed arch, has been classed under the general name of GOTHIC ARCHITECTURE. This name has been objected to, as being incorrect, and as conveying an erroneous idea of the origin and invention of the style to which it is appropriated; yet, however ill chosen the epithet may be, or however contemptuous the sense in which it was originally applied, the usage of it has become so confirmed through a succession of ages, and it is also now so difficult to find a more fitting appellation, that it seems altogether useless to attempt to explode it. "The architecture of the middle ages," and "Christian architecture," have been suggested as more expressive of the style in question; but both these terms are objectionable, and involve some degree of error. Perhaps "Pointed Architecture" may be considered the least exceptionable term, and may be used synonymously with the word "Gothic."

It will not be uninteresting to place before our readers a few, out of the many theories which have been started as to the origin of pointed architecture—theories amid which, as it has been said, it is as easy to find the pole as to arrive at the truth. "Sir Christopher Wren was of opinion," says his son, "that what we now vulgarly call the Gothic, ought properly and truly to be named the Saracenic architecture refined by the Christians, which first of all began in the East, after the fall of the Greek empire, by the prodigious success of those people that adhered to Mahomet's doctrine, who out of zeal to this religion built mosques, caravanserais, and sepulchres, wherever they came. These they contrived of a round form, because they would not imitate the Christian figure of a cross, nor the old Greek manner, which they thought to be idolatrous, and for that reason all sculpture became offensive to them. They then fell into a new mode of their own invention. The quarries of great marble by which the vanquished nations of Syria, Egypt, and all the East had been supplied for columns, architraves, and great stones, were now deserted. The Saracens, therefore, were necessitated to adapt their architecture to such materials, whether marble or freestone, as every country readily afforded. They thought columns and heavy cornices impertinent, and might be omitted; and affecting the round form for mosques, they erected cupolas in some instances with grace enough. The holy war gave the Christians who had been there an idea of Saracen works, which were afterwards by them imitated in the West, and they refined upon it every day, as they proceeded in building churches." Lord Aberdeen supports Wren in this theory, and says, "If a line be drawn from the north of the Euxine through Constantinople to Egypt, we shall discover in every country to the eastward of this boundary frequent examples of the pointed arch, accompanied with the slender proportions of Gothic architecture; in Asia Minor, Syria, Arabia, Persia, from the neighbourhood of the Caspian through the wilds of Tartary; in the various kingdoms, and throughout the whole extent of India, and even to the furthest limits of China. It is true that we are for the most part unable to

ascertain the precise dates of these buildings; but this is in reality not very important, it being sufficient to state the fact of their comparative antiquity, which, joined to the vast diffusion of the style, appears adequate to justify our conclusion. Seeing then the universal prevalence of this mode in the East, which is satisfactorily accounted for by the extensive revolutions and conquests effected by the eastern warriors in that part of the world, it can scarcely appear requisite to discuss the probability of its having been introduced from the West; or still less further to refute the notions of those who refer the origin of the style to the invention of English artists."

Gray, the poet, who patiently studied both eastern and western architecture, maintains an opposite opinion. He traces the derivation of the Moorish from the Grecian, but will not admit the idea that the Gothic was a copy of the Moorish. "That the Gothic manner is the Saracen or Moorish," he says, "we have the great authority of Sir Christopher Wren's opinion; and yet I cannot help thinking it undoubtedly wrong. The palaces in Spain I never saw but in description, which gives us little or no idea of things; but the doge's palace at Venice I have seen, which is in the arabesque manner; and the houses in Barbary may be seen in Dr. Shaw's book, not to mention abundance of other eastern buildings in Turkey, Persia, &c., which we have views of, and they seem plainly to be corruptions of the Greek architecture, broke into little parts indeed, and covered with little ornaments, but in a taste very distinguishable from that which we call Gothic. There is one thing which runs through the Moorish buildings, that an imitator would certainly have been first struck with, and would have tried to copy, and that is the cupolas, which cover everything,—baths, apartments, and even kitchens; yet who ever saw a Gothic cupola? It is a thing plainly of Greek origin. I do not see anything but the slender spires which serve for steeples, which may perhaps be borrowed from the Saracen minarets on their mosques."

The very different theory which supposes the Gothic to be a mere corruption of the Grecian style was advocated, among others, by Horace Walpole, and Barry the p[illegible]. The latter, writing from Italy, says, "The manner of building called Gothic, is generally believed to have been the invention of the Goths, as the name imports, and to have been brought into Italy by these barbarians, after they had established themselves upon the ruins of the Roman empire. The beginnings of this barbarous architecture, however, are traceable in buildings erected in Italy even before the arts were much declined, and long before the Goths had any footing there. The number of examples have convinced me that it is nothing more than the architecture of the old Greeks and Romans in the state of final corruption into which it had fallen."

Passing over the theory which led Warburton to conclude "that no attentive observer ever viewed a regular avenue of well-grown trees intermixing their branches over head, but it presently put him in mind of the long vista through the Gothic cathedral,—or even entered one of the larger or more elegant edifices of this kind, but it presented to his imagination an avenue of trees; and this alone is what can be truly called the Gothic style of building," we may notice some sensible remarks advanced by the Antiquarian Society in 1802, as follows:—"It is much to be wished that the word Gothic should no longer be used in speaking of the architecture of England from the thirteenth to the sixteenth century. The term tends to give false ideas on the subject, and originates with the Italian writers of the fourteenth and fifteenth centuries, who applied the expression, *La Maniera Gotica*, in contempt to all works of art in the Middle Ages. The style used by the Saxons is very properly called Saxon. The improvements introduced after the Norman Conquest justify the appellation of Norman to the edifices of that period. The nation assumed a new character about the time of Henry the Second. The language properly called English was then formed, and an architecture founded on the Norman and Saxon, but extremely different from both, was *invented* by *English artists*. It surely is equally just and proper to distinguish this style by the honourable appellation of *English*; and it is to be hoped that no English antiquary will be offended at the substitution of an accurate and honourable name in place of one which is both contemptuous and inappropriate."

It would occupy too much time to state all the various conflicting opinions as to the origin and formation of the Gothic style. The difficulties attending the subject have awakened much zealous research and controversy, and have been the means of exciting a desire for the study of Gothic architecture, and a popular feeling towards it, which have proved highly beneficial. One of the most probable conjectures respecting the origin of the pointed arch, is that of Milner, who supposes the idea to have been suggested by the intersection of circular blank arches crossing each other, and employed for decoration on the faces of walls. But the mere circumstance of doors or windows being pointed is insufficient to give an idea of the finished style itself, and it is probable that the researches of antiquarians will not throw much light on this contested subject. The Italians made a division of the pointed style, in accordance with the distinguishing character which it assumed in different countries; thus they called the style which prevailed in the north of Italy the *Lombard Gothic;* that on the north of the Alps they called *German Gothic;* and that in Spain, and other countries, they called *Arabic*, or *Moorish Gothic*. In England the different features of the style are termed *Saxon* and *Norman Gothic, Full* or *Simple Gothic*, and *Florid Gothic*.

Between the sixth and tenth centuries the religious structures of Italy were probably raised on the plan of the ancient basilicæ, or of the cathedral at Constantinople; but after the tenth century, the characters of the eastern and western basilicæ seem to have coalesced, forming what is commonly called the *Lombard Gothic;* a style of building which resembled neither the Roman basilica, nor the Greek cross and cupola. This style was called by the French the *Lombard*, as indicating the place in which this new system of church-architecture was matured. In England it received the name of the *Saxon*, but without sufficient authority; since the rude Saxons imported into Britain no style of building peculiar to themselves. It has also been called *Norman*, because the style was adopted in Normandy, whence it was more immediately imported into Britain.

In preference, therefore, either to Norman Gothic, Saxon, or Anglo-Saxon Gothic architecture, we shall prefer the term *Lombard Gothic*, as more expressive of the country and people, where and by whom those peculiar forms, borrowed or imitated, were combined, and first extensively practised and extended to other countries of Europe.

The chief characteristics of the Lombard style, in contradistinction to the Grecian style, are a general clumsiness and want of proportion, together with a large variety of ornament in very questionable taste.

The form of the Lombard churches is that of a Latin cross, oblong, with a semicircular chancel: consisting within of a nave and two aisles, separated by arched arcades, and often with a crypt beneath: support is given by means of small buttresses placed without the building. The semicircular Roman arch is almost always employed in these structures in the doors and windows, and indeed wherever an arch is required. Columns too are made to occupy the subordinate place of piers or supports to arches, thus entirely changing this principal feature of Grecian architecture.

The most remarkable ornament of this style is the *chevron* or zigzag work, occurring in single, double, triple, and quadruple rows, and of various dimensions, between the mouldings of doors and windows. Then come the festooned, the crenelated, and the billet mouldings: then the mouldings severally called pine cone, the simple and double astreated, diamond, platted, the beak, and the cat-head.

The columns are of various forms and proportions, depending upon the office they fill: the shaft is usually of equal diameter throughout. The earliest forms were cylindrical, with a rough square block for a base: afterwards multangular shafts were formed; and others with slender half columns round a thick pillar. The shafts are sometimes covered with spiral or zigzag ornaments, or with rhomboidal or lozenge-shaped panels sunk therein.

The capitals too are very various. They are usually large, square stones; either plain or rudely carved with grotesque figures of animals, monsters, and human beings in all sorts of attitudes. Sometimes they resemble baskets or vases with volutes or scrolls below the angles of the abacus: the dentil-bands, beadings, and foliage of Roman capitals were modified and copied from the ruins of the edifices of that nation.

The door-ways and windows were extremely deep, on account of the thick walls of these edifices. These openings were surmounted with semicircular arches, the mouldings about which are composed of reeds and channels with concave or plane faces between them. The concave spaces are either unadorned, or have at intervals roses and foliage,

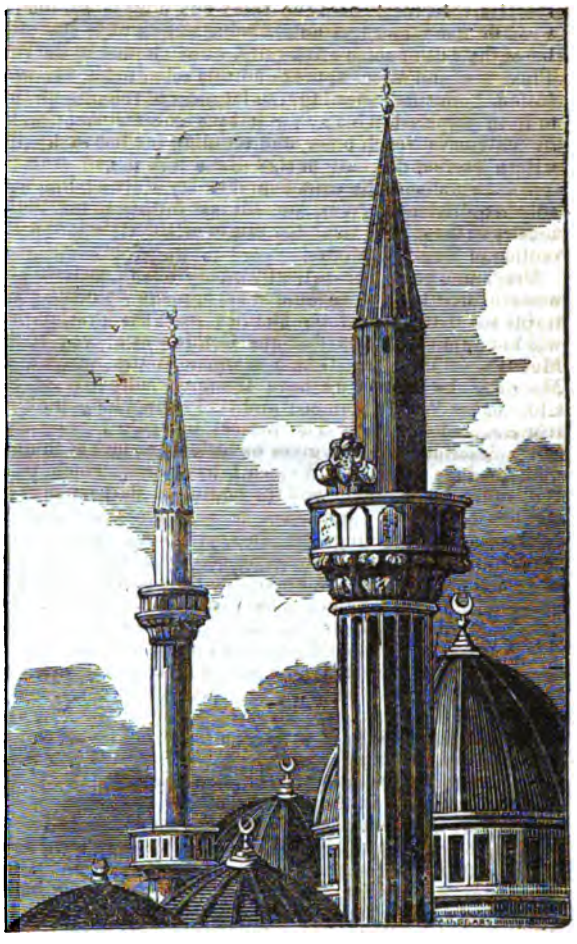
and grotesque figures of animals or heads. The archivolts are frequently covered with a profusion of chevron-work, and the soffits of the arches are notched, so as to correspond therewith. The windows of the upper story were smaller than those below, and germinated, that is, two small ones were included within a large one, supported by plain short pillars. Triple windows were also introduced, consisting of a central window, with a smaller one on each side. We notice also a series of false windows formed by intersecting arches, and employed in second stories, to decorate the outer walls.

Corbels were in general use: in the early specimens they were very clumsy, and projected considerably for the support of a massive flat cornice: their ends were ornamented with uncouth figures; but afterwards with heads only, when they supported one, two, or three rows of arches. In still later specimens the corbels support a very narrow cornice, or a narrow band with a saw edge is substituted for them.

The Lombard architects also constructed bell-towers, for the purpose of collecting a congregation from distant points at a particular hour; and in order that the sound of the bells might be extensively diffused, and not impeded by surrounding objects, the bells were hung in the uppermost part of the tower or belfry. At first, these towers were plain square buildings, not rising above the roof of the church; they were afterwards increased in height, and steeples were added. As the use of bells became more general, a building separate from the church was erected to contain them; because neither belfries nor baptistries were considered to be essential parts of the church. At a still later period, these belfries were added to the general structure of the church, the appearance of which was thereby greatly improved.

Although the round, or Lombard, style of architecture had become universally adopted throughout the countries which acknowledged the jurisdiction of the Latin church, and though the prevalence of its forms throughout Europe, Asia, and Africa, marked as it were the bounds of papal authority, yet at the very period when it seemed to have secured a lengthened duration, it was suddenly neglected for a new, and very different style of architecture.

In districts where the requisite materials for building were scantily supplied, it was desirable, nevertheless, to build churches in such a manner as that they should afford room for the accommodation of large congregations—for the arrangement of processions—for the performance of numerous services and masses; and that they should stand pre-eminent above all other buildings, while at the same time the quantity of materials employed in their construction would be the smallest possible. It was also necessary that in northern countries, such a form of building should be employed as would combine, with great extent and elevation, the advantage of surfaces which should afford little opportunity for the accumulation of snow on the roofs. Thus, in ages when the arts and sciences were almost confined to the religious communities, and when monks were themselves the chief designers of sacred edifices, it is to be supposed that fitness for the purposes of religious worship, and adaptation of the building to the climate in which it was to be erected, were mainly studied by them, and led the way for many of the new and peculiar characteristics of the style in question. In all previous styles of architecture the walls were employed to enclose the space destined for use, and to support the roof which protected it above. They were therefore made of such an extreme thickness and size as to occupy much of the space which might have been gained in the interior of the building, as well as to consume a vast quantity of materials. Where insulated pillars were added, they only shared with these massive walls the task of supporting the covering overhead; and as the arches within were still rounded and spreading, they could be covered by roofs of only moderate pitch. But, in the new method of arrangement, architects no longer constructed for the general support of the roof a continued mass of masonry, but erected pillars at certain distances from each other, which might leave an unobstructed space around and between them, but whose position should be so regulated as to afford sufficient support to the superincumbent parts. Thus was formed a skeleton of long thin masses, with wide interstices between; and these forming the support of the roof of the building, to the relief to the walls and arches, nothing more was required as a lateral enclosure than a mere partition to shield the edifice from the intrusion of man and the effects of the elements. At first, the arches of these buildings continued to be made semicircular; but after a while,



SARACENIC ARCHITECTURE.—MUEZZIN CALLING TO PRAYER.

in order perhaps to gain additional elevation, and means of supporting the roof, the arches and ribs, and cross springers over them, were made pointed. But while the rounded arches of the Lombard style had a pressure almost entirely in a downward direction, and required only a shallow buttress, these new arches and ribs, weighing less heavily on the piers beneath them, but imposing an oblique pressure, which had a tendency to drive the pillars outwards, demanded a counter pressure also in an oblique direction; and on this account masses of masonry, called *buttresses*, were added to the perpendicular pillars. When the arch was of excessive height, the buttresses were not formed of solid bodies of masonry, but were carried out in the shape of an arch on each side, and became what are called *arched* or *flying buttresses*. These were at first short, and close to the body of the building; but afterwards, when they became too wide and spreading for longer concealment, they appeared on the outside richly adorned, and forming one of the peculiar characteristics of the style. It was found that a vertical weight on that part of an arch which joins the pier has a tendency to counteract the outward pressure of the former on the latter; and additional weights were therefore added to the buttresses, in the form of *pinnacles*, marking on the outside of the building the positions of the different rows of pillars within, as well as of the individual pillars which composed them

In the change which thus took place in the character of public edifices, it became necessary to dismiss the former accompaniment of the arch, the noble cupola. The spread of the cupola would have been inconsistent with the character of the new style of building, which indeed was not fitted to support such an appendage; instead therefore of width, the *height* of the edifice was the most remarkable feature to be observed; and accordingly, at the crossing of the nave and transepts, a tower was carried up into a square, with a steeple which diminished in circumference as it attained a height equal with the elevation of the nave. The system introduced into the body of the churches of carrying everything to the greatest height, and giving it the utmost sharpness, was also observed in the construction of

steeples. In most cases the spire was a mere addition in wood or stone, and had no direct connexion with the tower beneath; but in some of the edifices of Germany, as Ulm, Frankfort, and Vienna, the architects seem to have contemplated, from the beginning, the loftiness of the summit, and to have prepared the way for it by a succession of arches growing out of each other, and receding behind each other, with a gradual decrease in size to the very top.

As the walls of the edifice in this style of building were only required as screens, and not as supports, the spaces between the pillars were occupied by windows, the extreme outline of which was often carried to the very edge of the pillars and arches, between which they were placed. This arrangement had the effect of displaying the boldness and lightness of the structure; and in order that the windows might the more fully harmonize with the pointed arches of the building, they were now constructed on the same plan, and their arches were likewise pointed. Thus the pointed arch became universally and exclusively adopted as a necessary consequence of the new style of architecture, and a taste having been acquired for such forms of building, they were copied and perpetuated in countries were utility did not demand their introduction; arches were multiplied, and carried into minute subdivisions, intersecting each other in all directions, while the building was likewise adorned with *pinnacles*, *spires*, *tabernacle work*, *cusps*, *corbels*, and *tracery*, in almost endless profusion. From the universal shaping of every part, the most appropriate term for this description of architecture seems to be indeed the *pointed*, and no appellation could be formed to give a better idea of the grand general characteristic of the style. In the western front of the building there was generally one large window with vertical sides and a pointed arch. All the windows were divided into two or more apertures, or *lights*, and the vertical posts which formed these divisions were termed *mullions*. These frequently branched off at the top, and intersected each other; and when the height of the window was great, there were likewise horizontal bars, or mullions. The intersecting mullions, as well as the ribs of the groined ceilings, formed what was called *tracery work*. The ridges of spires and pinnacles, as well as the pediments of windows, were frequently adorned with sculptured leaves, placed at intervals; and these from their curling forms were called *crockets*. The summits of such pediments and pinnacles were likewise furnished with knots of foliage, which were termed *finials*, and the sculptured canopies which covered tombs, or niches for statues, either on the exterior or interior of the building, were named *tabernacle work*. In the upper part of the windows the stone-work is frequently disposed in three or more segments, with *cusps*, or points projecting inward; and these, from their resemblance to leaves, have, according to the number of such segments, the names of *trefoils*, *quatrefoils*, &c.

A still increasing taste for ornament gradually appeared: pillars, at first distinct, but close to each other, were conglomerated into one single cohering mass, each pillar being more slender than before, and each branching off into some of the arches or ribs, or springers, which gave strength to the building, while they added to its apparent lightness. These again were subdivided and multiplied, diverging, converging, and intersecting each other for the sake of ornament, till they formed all that complicated tracery and arching that adorns windows, screens, balustrades, buttresses, &c. The supports of the building being lengthened and compressed, every portion of solid masonry that could be spared being entirely removed, and that which was necessary to the support of the fabric being ingeniously perforated and ornamented, or covered with a veil of tracery of the lightest and most elaborate description; all concurred to strike the spectator with astonishment, and to excite his curiosity as to the means by which so great a weight could be sustained by such apparently slender support. The ornamental details were sometimes carried to absurdity; for instance, where the figures of saints were deemed appropriate ornaments, they were often squeezed into the confined spaces between the shafts, where their narrow lank figures approximated indeed to the pointed style of the edifice, but presented a most unnatural representation of the human form. It was likewise deemed ornamental to deck the curve of an arch with such figures, and no objection was made to the ridiculous position in which they were placed, one above another, and many of them necessarily laid on their sides.

Another ornament, which formed a considerable feature of the pointed style, was armorial bearings. These were derived from the Crusades; and the successors of such as gained renown in the holy wars, not contented with placing the shields and helmets adorned with these insignia in their halls and dwellings, brought them to the temple of the god of peace, where they were hung in reality or in effigy around the tombs or funeral chapels of their deceased relatives, thus telling a tale of feud and warfare, in a spot where earthly care and turmoil should be no more remembered.

Many buildings, commenced in the pointed style, could never be completed on their original plan; for the architects, in a desire to astound the vulgar, by the height, lightness, and boldness of their structures, frequently lost sight of the degree of strength necessary for their support; and of those which were completed under the influence of such a desire, many fell to pieces almost immediately. It must be confessed that, beautiful as it is, Gothic architecture has not within it so permanent a degree of solidity, as that where the pressure is perpendicular, instead of oblique; or where the arches being rounded have a pressure much less oblique than in the pointed. That part of the building in which the service was performed was generally built first; and thus we find the choir to have been in several instances the only part completed.

The states of Lombardy, and other neighbouring republics, being early remarkable for their industry and public spirit, soon began to construct fabrics for civil purposes; and as these arose during the reign of the rounded style of architecture, their town-houses, corporation-halls, &c., exhibited some degree of elegance in that style. As commerce and the arts extended towards the north, each of the rising cities began to take pride in rearing, in addition to cathedrals and churches, magnificent halls for the meetings of its magistrates and merchants, and even fine houses for the dwellings of its inhabitants. In Germany, the style is pure pointed: in Belgium, a sort of *cinque-cento*, or transition from the pointed to the antique.

Germany, where pointed architecture is supposed to have been first produced, is also the country where the finest buildings of that style have been erected, and where the taste for it has been of the greatest duration. France seems next to have received the knowledge of this style, and soonest to have rivalled her neighbour in it; but many of the plans were executed only in part; and of those which were the most beautifully carried into effect, the ornamental parts of the buildings have unfortunately fallen a sacrifice to iconoclastic* zeal; while many of the edifices themselves have since been levelled with the ground by the revolutionists. England seems next to have received the knowledge of Gothic architecture, but the buildings were mostly executed in a plain and simple manner. The cathedral of Amiens, was begun in the same year with that of Salisbury (1220); and the Sainte Chapelle at Paris was consecrated only twenty-eight years after: the comparison, therefore, of these buildings with each other, will show that England had not at that period received the knowledge of, or possessing the knowledge had not yet acquired the taste for, all that aërial lightness, and that luxuriance of ornament, which are so remarkable in the French churches. The zeal for pointed architecture however was fully displayed in this country. Many of our churches display the mixture of the Lombard with the pointed style; the buildings having been commenced in the former, and finished in the latter. Dunstable, Canterbury, Peterborough, and Ely exhibit a union of the two styles; while Salisbury, Wells, Exeter, Litchfield, York, and others are entirely pointed. Our cathedrals, however, cannot be compared in size with those on the continent; our naves and choirs are inferior, and with the exception of Henry the Seventh's chapel at Westminster, St. George's chapel at Windsor, and one or two others, we have no religious or other edifices, which display an equal richness of decoration with the foreign buildings. In Italy, the pointed style is found everywhere engrafted on the round; or where the building itself is in the latter style, the bishops' thrones, the altar, canopies &c., are pointed: yet it never gained the same ascendency in that country, which it did further to the north; and most, of the Italian cathedrals which are called specimens of the pointed style are deficient in its essential characteristics. During the prevalence of this style, no peculiar name was given to it; but, afterwards, when it was superseded by the so-called *return to the antique*, it was considered as barbarous, and stigmatized by the name of GOTHIC.

* This word is compounded from the Greek, and means *image-breaking*.

8. THE CINQUE-CENTO STYLE.

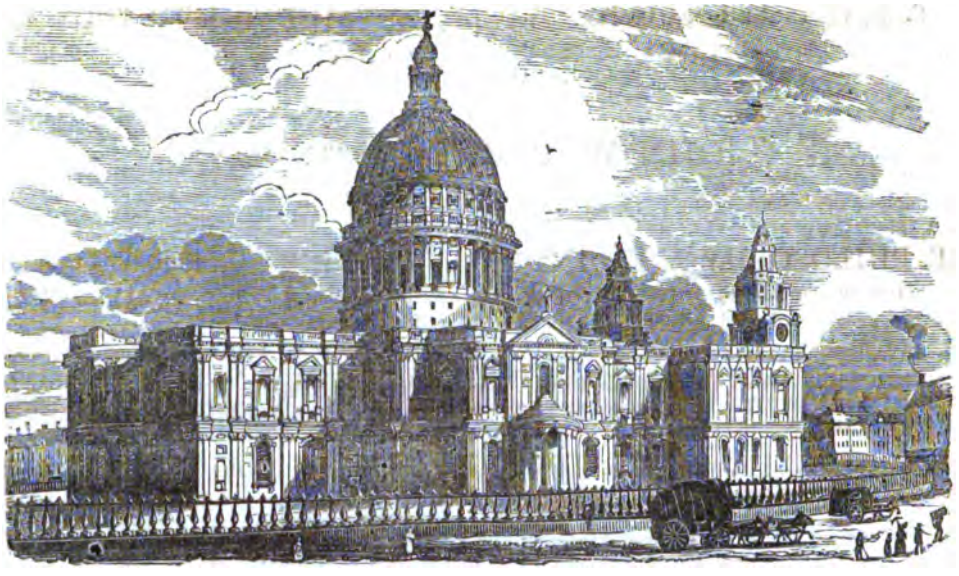
We shall now proceed to speak of that rapid and universal change which caused the rejection of pointed or Gothic architecture, and the adoption, in some superficial degree, of the styles of ancient Greece and Rome. This sudden desertion of all that had been the most admired, and the most carefully perfected, has been assigned by some to the accidental discovery of some of the master-pieces of ancient literature, which had long lain hidden in monastic libraries, and of some specimens of ancient art, rescued from beneath the soil of Rome. By others it has been considered as the necessary consequence of a returning taste for the literature and the fine arts of the ancients. It has been likewise attributed to the conquest of Constantinople by the Turks in 1453, which drove many Greeks from their homes, and by their means introduced into the Latin empire the fondness for ancient architecture, which those Greeks are supposed to have preserved. The most reasonable of these suppositions is that which ascribes the change to a revival of industry, trade, and public spirit, and of whatever else might lead the way, as in ancient Greece, for a prevailing taste for literature and the fine arts. The spirit of liberty was abroad; men were beginning to throw off the shackles which had bound them down in ignorance and inaction, and a knowledge of ancient art was no longer confined to the dwellers in monasteries, and kept a secret there. As the wealth and skill of the laity increased, the number of important fabrics, unconnected with religion, increased also: and as the church, about the era of the especial pre-eminence of the pointed style, began to decline in power and resources, and those agents of the Pope and of the church, whom we have already spoken of, the masonic bodies, were either expelled or withdrawn from most of the stations they formerly occupied; we see here sufficient to account for the extensive change which took place in the feelings and tastes of people in general. Nor is it surprising that a reversion should take place to those ancient and comparatively simple models of Greece and Rome, at a time when the expulsion of the free-masons, who had so deeply studied the pressure and counter-pressure of the most complicated arches, left the less skilful architects imperfectly acquainted with the mysteries of the pointed style. But as this attempt at a resumption of ancient style was rather the effect of an inability on the part of the architects to continue building after the pointed fashion than owing to any real love for the antique, so we find their works to have been of an inferior description, exhibiting in one edifice a collection of patterns of the different ancient orders, instead of a consistent following out of any one of them. Those buildings which retained most of the Lombard style, and thus had not departed so widely from the Roman character, were at first left to preserve their peculiar minuteness of general proportion and other characteristics, and only received in their minor details an appearance more directly assimilating them with pagan Rome. The excavations of ancient baths, and other structures, had brought to light those sculptured imitations of animal and vegetable life which had formerly taken the place of better ornaments; and these, which were called *grotesques* from being found in grottoes, were imitated on every panel and frieze and entablature, while richer ornaments were added in bronze, porphyry, &c. These ornaments were applied without much discrimination, whatever might be the character or purpose of the building. This attempted imitation of the antique has been called, from the era in which it flourished in Italy, the CINQUE-CENTO style. Among the most celebrated architects in this style may be named Brunelleschi, the first restorer of it, Bramante, Leon Baptista Alberti, and Pietro Lombardo.

The abandonment of pointed arches, and the return to the ancient orders of architecture, begun in Italy, soon crossed the Alps, and entered successively France, Spain, Germany, and England. In the last-mentioned country, the cinque-cento style did not develope itself till a century and a half after Brunelleschi had begun the restoration of the antique in Italy. The new or revived style was at first employed only in the members and details of the edifice, while the old was retained in all the general elements of the composition. It appears to have been the custom to commit the design and construction of the buildings to native artists, while foreign innovation was displayed in the mere ornamental details. From the time of the Reformation, a method of building had been gradually adopted, which is usually called Tudor Architecture, or Tudor Gothic, and which has been styled the illegitimate offspring of the Grecian and the Gothic. It was inferior in elegance to the one, and in magnificence to the other, but it combined a degree of security with domestic comfort, peculiarly suitable to those times. Of the generally picturesque effect of this style, notwithstanding its wildness and oddity, a modern writer of acknowledged taste thus speaks:—"The baron's picturesque hall seemed the offspring of the soil, and in harmony with the accompaniments. The hill, the river, the groves, the rocks, and the residence, seemed all to have risen into existence at once. Tower was heaped upon tower; there was a wilderness of pinnacles and crow-stepped peaks; jealous windows barred and double-barred with iron; passages which led to nothing; ridges of roofs as sharp as knives, on which no snow could lie; projection overlooking projection, to throw the rain from the face of the wall and casements at the very summit of the edifice." But this, as well as the purer Gothic, was now to give way for the introduction of the Cinque-cento or Italian style. The first examples of this style in England were shown at Oxford, in the five orders piled one above another in the front of the public schools, and in the monuments of Elizabeth, and Mary Queen of Scots, in Westminster abbey; all very inferior to the works of that style in Italy. Inigo Jones was the first in England who gave an example of a single colossal order, and this was in the church of St. Paul's, Covent Garden; while Michael Angelo was the first who had, long previously to this, resumed the colossal style in Italy.

Sir Christopher Wren, who is said to have been inferior to Inigo Jones in invention, but greatly his superior in the perfect unity and elegance of his designs, had the best possible opportunity of exercising his talent at the restoration of Charles the Second, and at a period when the metropolis had been cleared of its crowded buildings by the destructive fire of 1666. The noble and magnificent cathedral of St. Paul stands as the memorial of his greatness, and as an instance of the consistent application of the style we are now considering. During the reigns of Charles the Second, of William and Mary, of Anne, (Wren's constant friend and patroness,) and the commencement of the reign of George the First, he carried on this great work and was enabled to finish it according to the model he had commenced with, though not without much interruption and interference on the part of those who were little qualified to judge of the merit of his work. As a reward for these persevering exertions, and for the disinterested spirit which actuated him throughout, he was dismissed from his office of surveyor-general to the royal buildings, in the eighty-sixth year of his age, and the forty-ninth of his holding the appointment, and a young architect of little skill or talent, named Benson, was appointed in his room. "The length of his life," says Walpole, "enriched the reign of several princes, and disgraced the last of them." Of that grand monument of his fame, St. Paul's Cathedral, there is already some account in a former volume of this work*, illustrated by a view of the west front of the edifice. We subjoin a view of the cathedral in its northern aspect, with Cunningham's remarks, who places this building first in outward majesty, and second in internal grandeur, amongst the churches of Christendom. "Buried amidst a thick piled city—hampered as its architect had felt himself in planning the western front to suit that narrow aperture called Ludgate Hill—composed as it is of free-stone, and not of marble, and stained with all impurities of sea-coal smoke—St. Paul's never fails to fill the mind of the commonest beholder with admiration at its exquisite unity, and varied and boundless magnificence. To construct a small work, pleasing at once from its beauty and neatness, is something; but to conceive and unite the many distant and distinct parts of such an immense pile as this into one complete whole, tying them together with that magic band which is at once their ornament and security, like the sculptured key-stone of a triumphal arch, requires a master spirit.

"Foreign censure, as well as native praise, has been exhausted on St. Paul's; and above all, the Abbé May has distinguished himself by his abuse of the masterpiece of Wren. His fastidious severity might easily be shown by precedents which all bow to, by reference to geometrical rules of construction which must be obeyed, and by the difficulties which the stone presented to be frivolous or unfounded. The coupled columns of the grand portico, in

* *Saturday Magazine*, Vol. IX., p. 73.



VIEW OF ST. PAUL'S

particular, have been censured, both by the Abbé and one of our own critics, according to whom the Corinthian capitals, sitting in pairs, injure and obscure each other, and, when viewed obliquely, seem in confusion from the mixture of profiles. If we judge by bits there will be room enough for such criticism in any human work, but it is the general result we must look to, for to that the great artist lent all his thoughts. If we take this portico as a detached work of art, the eye will require all parts to be seen, and will consider the coupled columns as contrary to the strict rules of the profession, since they obscure at least one side of the capital; but look at the portico in its place, as forming a small portion of a majestic pile, in which there are many porticos, straight and circular, and we see at once that it has been devised with a view to the general effect, and could not well be otherwise than it is without positive injury. Single columns, I am convinced, would seem weak and unequal to the task these have to perform. The tradition of Portland states that stones could not be shipped large enough for the frieze of a portico with single columns, while another story points to the desire of the clergy to have a column for each apostle within a space which could not contain the number without having them coupled. The recessed portico of the second story is a portico for doves and angels, for no earthly being without wings can approach it; but this criticism affects nearly all the architecture of modern times, and the error, if such it be, must be ascribed partly to the object in view and partly to the nature of the materials. The perpendicular portion of the dome, which rises over roof and tower, and can be seen as far as Windsor one way and the sea another, has been more justly complained of as much too plain: it is deficient in light and shade. As Wren has borrowed not very sparingly from the designs of Inigo Jones, he might have formed a dome of a richer pattern. I am afraid to mention what I suspect to be true, that he was alarmed at adding abutments to the dome, lest the increase of weight might be injurious; yet, to secure it, he cut a deep groove or channel in the stone all round, and laid in this a double band or chain of massy iron, strongly linked together at every ten feet, and run flush with lead and hammered smooth and fair. This, though perfectly solid and firm, and employed in Salisbury steeple and St. Peter's dome, is upon his own principles a defect in the construction. The entire structure may be accused of want of massiveness, and of that severe dignity which prevails in so many of the classic fabrics. It is an union of small parts, and relies more upon its geometrical combinations for keeping it together than on the solid strength of its masonry, and the gravity of its materials. The chief fault, however, is an invisible one. Though the stones are hewn with the greatest nicety, and the masonry seems all firm and compact, yet the mortar which should unite the whole into one solid mass, is in many places decayed, and become as dust. This is the case even with some of those massive piers against which the public monuments are erected. When the outer line of stone is cut through, the mortar comes gushing out in dust at the aperture. The sand is sharp and good, but the lime, like too much of the lime used in London, has been deficient in strength."

Since the time of Sir Christopher Wren, the Cinque-cento style has been applied with more or less taste to the different public and *private* edifices of this country. For so much are the refinements of civilized life extended amongst us, that men are no longer satisfied with the view of beauty and magnificence in edifices set apart for ecclesiastical and civil purposes, or to admire at a distance the splendour of palatial edifices, but are emulous of transferring to their own habitations that harmony of construction and elegance of decoration which are so productive of pleasure and pleasurable emotions. Thus, the aid of architecture is sought everywhere, and, in many cases unfortunately, without a true perception of those principles which constitute its chief value. Thus the Grecian, Roman, and Gothic styles, are made use of, or even blended, without taste or discrimination, and it will be difficult at some future period to designate intelligibly the architecture of the present time. "Were architecture, as a fine art," (says Elmes,) "equally well understood by the nobility and gentry, by the literary and scientific world, and by the more opulent of the middle classes of England, as it was by the nobility and gentry of the Italian States, and the opulent merchants of Florence, and other commercial cities of modern Italy, a pure and classical style of architecture, and a refined taste in all our arts and manufactures, would equally predominate, and equally embellish the palaces, the streets, the villas, and the mansions of England, as they did the palaces, the piazzas, and the villas of Italy."

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Scripture Biography, which usually occupies a large space in many Bible Dictionaries, will be treated of in a brief and concise manner, giving only the characteristic outlines, except when difficulties occur which require to be cleared up.

The BIBLE CYCLOPÆDIA will bear throughout the same comprehensive character which distinguishes former works on the Illustration of the Holy Scriptures, embracing especially the subject of the Fulfilment of Prophecy, on which the researches of modern tourists have poured a flood of light. The topographical descriptions of many of the most remarkable places of Scripture will form a marked feature in its pages. It is perfectly astonishing to one who has never examined the subject, to find how *literally* and *minutely* the prophetic declarations of Scripture have been fulfilled. Indeed, it is impossible for the most determined infidel carefully to examine and weigh this subject, and not be forced to admit, that the BIBLE is divine, or, in the words of Bishop Newton, "he is reduced to the necessity, either to renounce his senses, deny what he reads in the BIBLE, and what he sees and observes in the world, or acknowledge the truth of prophecy, and, consequently, of divine revelation." A writer in the *Quarterly Review* justly observes, "We confess that we have felt more surprise, delight, and conviction in examining the accounts which the travels of Burckhardt, Mangles, Irby, Legh, and Laborde, have so recently given of Judæa, Edom, &c., than we have ever derived from any similar inquiry. It seems like a miracle in our own times. Twenty years ago, we read certain portions of the prophetic scriptures with a belief that they were true, because other similar passages had, in the course of ages, been proved to be so, and we had an indistinct notion that all these (to us,) obscure and indefinite denunciations had been, we knew not very well when or how, accomplished; but to have graphic descriptions, ground plans, and elevations, showing the actual existence of all the heretofore vague and shadowy denunciations of God against Edom, does, we confess, excite our feelings, and exalt our confidence in prophecy to a height that no external evidence has hitherto done. Here we have bursting upon our age of incredulity, by the labours of accidental, impartial, and sometimes incredulous (infidel) witnesses, the certainty of existing facts which fulfil what were considered the most vague and least intelligible of the prophecies. The value of even one such contemporaneous proof is immense."

Such is an outline of the main points to be embraced in the BIBLE CYCLOPÆDIA now submitted to the Public, and which the Editor trusts will be found to deserve support and encouragement. Numerous Woodcuts will be given of Coins, Medals, Gems, remarkable Places, and other subjects capable of legitimate illustration, from the best and most recent sources of information.

*** This Work is printed in small Folio, in a distinct and readable type, but with due regard to economy of space. It will be completed in about Thirty Monthly Numbers; and will form One or Two handsome Volumes, at the option of the purchaser.

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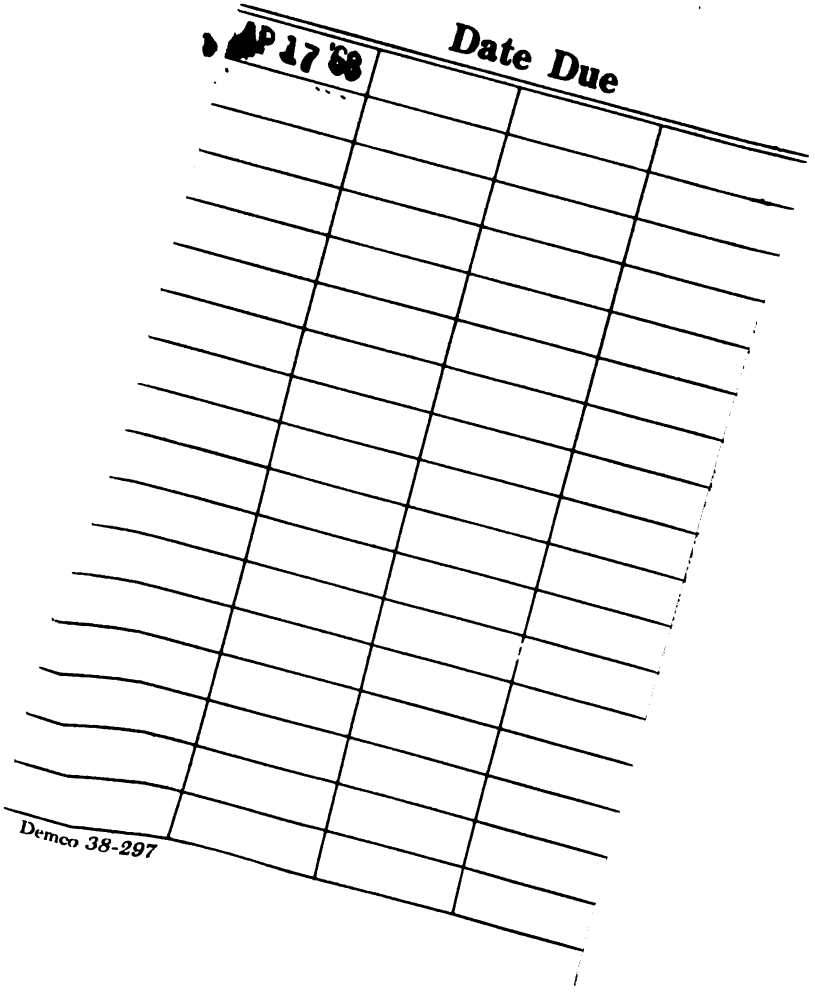

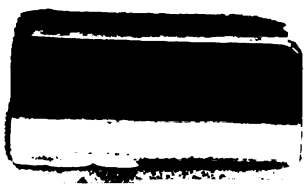

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